UPJ-1XP Compact VariO Loudspeaker
UPJunior-XP UltraCompact VariO Loudspeaker
UPM-1XP UltraCompact Wide-Coverage Loudspeaker
UPM-2XP UltraCompact Narrow-Coverage Loudspeaker
UMS-1XP UltraCompact Subwoofer

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Ultra XP Operating Instructions, PN 05.915.005.01 A

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CHAPTER 1: INTRODUCTION

HOW TO USE THIS MANUAL

Make sure to read these operating instructions in their entirety before configuring a loudspeaker system with ProductNames. In particular, pay close attention to material related to safety issues.

As you read these operating instructions, you will encounter the following icons for notes, tips, and cautions:

NOTE: A note identifies an important or useful piece of information relating to the topic under discussion.

TIP: A tip offers a helpful tip relevant to the topic at hand.

CAUTION: A caution gives notice that an action may have serious consequences and could cause harm to equipment or personnel, or could cause delays or other problems.

Information and specifications are subject to change. Updates and supplementary information are available at www.meyersound.com.

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- **Web:** www.meyersound.com/support
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ULTRA XP LOUDSPEAKERS

These operating instructions document the following Ultra XP loudspeakers:

- UPJ-1XP compact VariO loudspeaker
- UPJunior-XP ultracompact VariO loudspeaker
- UPM-1XP ultracompact wide-coverage loudspeaker
- UPM-2XP ultra-compact narrow-coverage loudspeaker
- UMS-1XP ultracompact subwoofer

NOTE: For the sake of brevity, when referring to these loudspeaker collectively, this document will refer to them as Ultra XP loudspeakers.

Ultra XP loudspeakers deliver the same sonic capabilities as their equivalent AC-based models, while also offering the advantages of IntelligentDC technology, making them an elegant solution for installations where AC cabling is not feasible. Powering Ultra XP loudspeakers from an external MPS-488HP IntelligentDC power supply affords the flexibility of lengthy cable runs without conduits.

With IntelligentDC technology, Ultra XP loudspeakers receive power and balanced audio from a single loudspeaker connector, available as a Phoenix™ 5-pin male, sealed Switchcraft® EN3™ 5-pin male, or sealed ECO-M 7-pin male. The use of composite multiconductor cables (such as Belden® 1502 or equivalent) allows a single cable to carry both DC power and balanced audio to Ultra XP loudspeakers. Ultra XP amplifier and signal-processing circuits store DC power and tolerate voltage drops, thereby accommodating light-gauge cables and lengthy cable runs.

UPJ-1XP Compact VariO Loudspeaker

UPJ-1XP Loudspeaker

The UPJ-1XP compact VariO loudspeaker includes one 10-inch cone driver with neodymium magnet, and one 3-inch compression driver coupled to a rotatable, constant-directivity 80-degree by 50-degree horn. The loudspeaker is powered by a 2-channel, class D amplifier. The cabinet is constructed of premium birch plywood and includes side handles and heavy-duty, corrosion-resistant 6061-T6 aluminum end plates with threaded M8 attachment points for QuickFly rigging options, basic eyebolt rigging, and third-party pole assemblies.

UPJunior-XP UltraCompact VariO Loudspeaker

UPJunior-XP Loudspeaker

The UPJunior-XP ultracompact VariO loudspeaker includes one 8-inch cone driver with neodymium magnet, and one 2-inch compression driver coupled to a rotatable, constant-directivity 80-degree by 50-degree horn. The loudspeaker is powered by a 2-channel, class-D amplifier. The cabinet is constructed of premium birch plywood and includes heavy-duty, corrosion-resistant 6061-T6 aluminum end plates with threaded M8 attachment points for QuickFly rigging options, basic eyebolt rigging, and third-party pole assemblies.

UPM-1XP UltraCompact Wide-Coverage Loudspeaker

UPM-1XP Loudspeaker

The UPM-1XP ultracompact wide-coverage loudspeaker includes two 5-inch cone drivers, and one 1-inch metal dome tweeter on a constant-directivity, 100-degree symmetrical horn. The loudspeaker is powered by a 3-channel, class D amplifier. The cabinet is constructed of premium birch plywood and includes three 3/8”-16 or metric M10 nut plates.

UPM-2XP UltraCompact Narrow-Coverage Loudspeaker

UPM-2XP Loudspeaker

The UPM-2XP ultracompact narrow-coverage loudspeaker includes two 5-inch cone drivers, and one 1-inch metal dome tweeter on a constant-directivity, 45-degree symmetrical horn. The loudspeaker is powered by a 3-channel, class D amplifier. The cabinet is constructed of premium birch plywood and includes three 3/8”-16 or metric M10 nut plates.

UMS-1XP UltraCompact Subwoofer

UMS-1XP Subwoofer

The UMS-1XP ultracompact subwoofer includes two 10-inch cone drivers. The subwoofer is powered by a 2-channel, class D amplifier. The cabinet is constructed of premium birch plywood and includes side handles and a pole-mount receptacle for pole-mounting UPJ-1XP, UPJunior-XP, UPM-1XP and UPM-2XP loudspeakers. The cabinet is optionally available (UMS-SM subwoofer) with factory-installed threaded end plates for single-mount configurations with the UMS-SM U-bracket.

MPS-488HP INTELLIGENTDC HIGH-POWER EIGHT-CHANNEL POWER SUPPLY

Ultra XP loudspeakers require an external MPS-488HP IntelligentDC power supply. The single-space 19-inch rack unit distributes DC power and balanced audio to up to eight Ultra XP loudspeakers, or other Meyer Sound IntelligentDC loudspeakers. Composite multiconductor cables, such as Belden 1502 or equivalent, can deliver both DC power and balanced audio to loudspeakers at cable lengths up to 150 feet with just 1 dB of loss in peak SPL using 18 AWG wire. Longer cable runs are possible with heavier gauges. Meyer Sound's RMS remote monitoring system is optionally available for the MPS-488HP.

MPS-488HP IntelligentDC Power Supply

CAUTION: Disconnect the mains plug before disconnecting the power cord from the MPS-488HP.

TIP: For complete information on using the MPS-488HP IntelligentDC power supply, refer to the *MPS-488HP Operating Instructions* (PN 05.205.005.01).

LATENCY OF ULTRA XP LOUDSPEAKERS

There is a very small latency of 1.58 ms for Ultra XP loudspeakers when compared to their equivalent AC-based models. This does not represent a problem when using Ultra XP loudspeakers with other Ultra XP loudspeakers. When mixing Ultra XP and AC loudspeakers in close proximity, the small latency can be easily addressed with a delay setting in a loudspeaker processor such as Meyer Sound's Galileo 408 or Galileo 616.

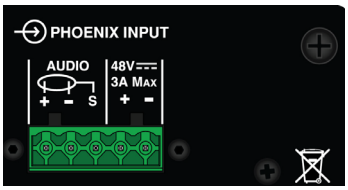
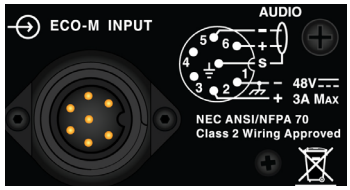
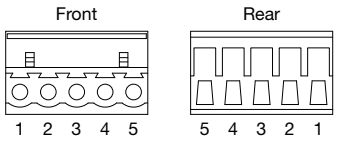
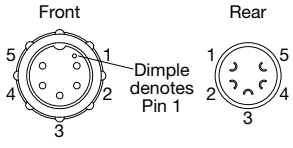
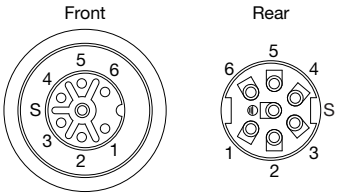
CHAPTER 2: ULTRA XP LOUDSPEAKERS

LOUDSPEAKER INPUT CONNECTOR

Ultra XP loudspeakers receive DC power and balanced audio from a single input connector, available as Phoenix™ 5-pin male, SwitchCraft® EN3™ 5-pin male, or ECO-M 7-pin male. The sealed EN3 and ECO-M connectors are ideal for outdoor, all-weather use. To function properly, Ultra XP loudspeakers require an external MPS-488HP IntelligentDC power supply.

All connectors include two pins for DC power (positive and negative) and three pins for balanced audio (positive, negative, and shield). Pin outputs are clearly labeled on loudspeaker user panels (pins 3 and 4 for ECO-M connectors are not used by Ultra XP loudspeakers). Ultra XP loudspeakers ship with an appropriate cable accessory for assembling loudspeaker cables (see Table 1). For more information, see “Belden 1502 Cable (or Equivalent)” on page 10 and Appendix B, “Assembling Loudspeaker Cables.”

Table 1: Loudspeaker Input Connector Options

		Phoenix 5-Pin Male	SwitchCraft EN3 5-Pin Male	ECO-M 7-Pin Male
Loudspeaker connectors				
Sealed (outdoor, all-weather use)		No	Yes	Yes
Included cable accessory		Phoenix 5-pin cable mount connector	EN3 5-pin-to-pigtail cable	ECO-M 7-pin cable mount connector
				
Belden 1502 wiring		Pin Outs		
DC power (–)	Black	1	1	1
DC power (+)	Red	2	2	2
Audio shield	Shield drain	3	3	S (Shield)
Audio (–)	Blue	4	4	5
Audio (+)	White	5	5	6

⚠ **CAUTION:** When wiring Ultra XP loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

CURRENT DRAW AND CABLE REQUIREMENTS FOR ULTRA XP LOUDSPEAKERS

DC current draw for Ultra XP loudspeakers is dynamic and fluctuates as operating levels change. Cabling between Ultra XP loudspeakers and their external power supply adds resistance and hence causes a voltage a drop at the loudspeakers. Because lower DC voltages compromise amplifier performance (peak SPL), and in some cases frequency response, cable resistance should be kept to a minimum.

Cable Lengths and Cable Gauges

Cable lengths up to 150 feet between the Ultra XP loudspeakers and their external power supply are supported with only 1 dB of peak SPL loss using 18 AWG wire. Longer cable lengths are possible with heavier wire gauges (see Table 2 and Table 3).

Table 2: Ultra XP Loudspeaker Cable Lengths (AWG)

Cable Gauge	Resistance (Ω/ft)	Approximate Max. Length
12 AWG	0.0016	600 ft
14 AWG	0.00253	375 ft
16 AWG	0.00402	237 ft
18 AWG	0.00636	150 ft
20 AWG	0.01008	87 ft

Table 3: Ultra XP Loudspeaker Cable Lengths (European)

Cable Gauge	Resistance (Ω/m)	Approximate Max. Length
2.50 mm^2	0.0052	157 m
1.50 mm^2	0.01076	87 m
1.00 mm^2	0.02087	45 m
0.75 mm^2	0.03307	27 m

NOTE: The total cable resistance between Ultra XP loudspeakers and their external power supply should not exceed 2 ohms.

NOTE: For long cable runs, you can use a large cable gauge for DC power and a separate balanced audio cable for audio. For more information, see “Long Cable Runs with Separate Cable for DC Power and Audio” on page 11.

Calculating the Maximum Cable Length

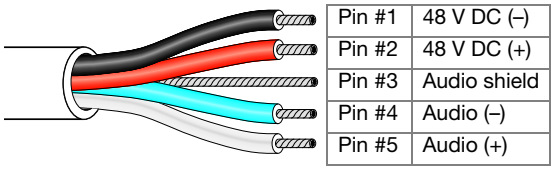
The maximum cable length for an Ultra XP loudspeaker can be calculated with the following formula:

maximum length = 2 ohms / 2 * cable resistance

For example, the maximum length of an 18 AWG cable with a resistance of 0.00636 is 157.2 feet (2 / 2 * 0.00636).

BELDEN 1502 CABLE (OR EQUIVALENT)

The most convenient method of wiring Ultra XP loudspeaker cables is with a multiconductor cable such as Belden 1502, which has dedicated conductors for DC power and balanced audio in a single jacket. When wiring loudspeaker cables with Belden 1502, use the conventions in Table 4. The red and black wires are 18 AWG, thicker than the other three wires, and should be used for DC power (cable lengths up to 150 feet are possible with just 1 dB of peak SPL loss). The blue, white, and shield drain wires should be used for audio.



Belden 1502 Composite Cable

Table 4: Ultra XP Loudspeaker Cables with Belden 1502

Wire	Signal	Gauge
Black	48 V DC power, negative (–)	18 AWG
Red	48 V DC power, positive (+)	18 AWG
Shield drain	Balanced audio, shield	24 AWG
Blue	Balanced audio, negative (–)	22 AWG
White	Balanced audio, positive (+)	22 AWG

CAUTION: When wiring Ultra XP loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

NOTE: For more information on cable assembly, refer to Appendix B, “Assembling Loudspeaker Cables.”

NOTE: For a complete list of available cables and cable accessories from Meyer Sound, refer to Appendix A, “Ultra XP Accessories.”

LONG CABLE RUNS WITH SEPARATE CABLE FOR DC POWER AND AUDIO

For installations where Belden 1502 is not feasible, or for installations that require cable runs longer than 150 feet, you can use separate cables for DC power and balanced audio: a large-gauge cable for DC and a high-quality, balanced audio cable for audio. The separate cables attach to the Phoenix connector at the loudspeaker as shown in the Figure 1. Cable runs longer than 150 feet for DC power require cable gauges larger than 18 AWG; for more information, see “Cable Lengths and Cable Gauges” on page 10.

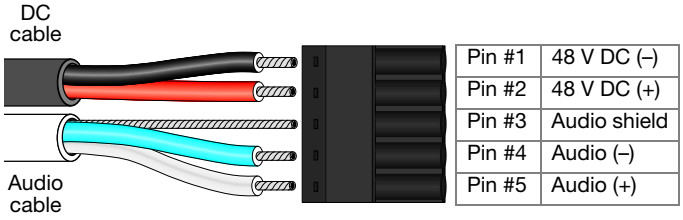
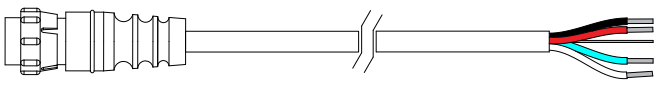


Figure 1: Separate Cables for DC Power and Balanced Audio

EN3-TO-PIGTAIL CABLES

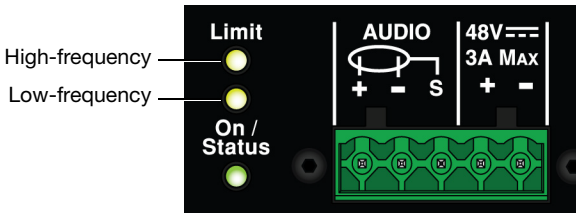
Ultra XP loudspeakers with EN3 connectors ship with an EN3 5-pin-to-pigtail cable. The EN3 end of the cable connects directly to the loudspeaker input connector. The pigtail end of the cable, which connects to the external power supply, can be terminated with either an EN3 5-pin male connector (included with the MPS-488HPe) or a Phoenix 5-pin female connector (included with the MPS-488HPp). The pigtail can also be spliced to a longer loudspeaker cable or to a junction box. The EN3-to-pigtail cable uses Belden 1502 cable (or equivalent), which can be wired for both DC power and balanced audio. The EN3-to-pigtail cable is available in plenum or regular (non-plenum) versions.



EN3-to-Pigtail Cable

LIMIT LEDS

When source levels for Ultra XP loudspeakers exceed maximum input levels for its drivers, limiting is engaged and is indicated by the two Limit LEDs on the rear user panel. The bottom LED indicates limiting for low-frequency channels. The top LED indicates limiting for high-frequency channels. When engaged, limiting not only protects the drivers, but also prevents signal peaks from causing excessive distortion in the amplifier’s channels, thereby preserving headroom and maintaining smooth frequency responses at high levels. When source levels return to normal, below the limiter’s threshold, limiting ceases.



Limit LEDs

Ultra XP loudspeakers perform within their acoustical specifications at normal temperatures when the Limit LEDs are unlit, or when the LEDs are lit for 2 seconds or less and then turn off for at least 1 second. If an LED remains lit for longer than 3 seconds, the loudspeaker enters hard limiting where:

- Increases to the input level have no effect.
- Distortion increases due to clipping and nonlinear driver operation.
- Drivers are subjected to excessive heat and excursion, compromising their life span.

CAUTION: The Limit LEDs indicate when a safe, optimum level has been exceeded. If an Ultra XP loudspeaker begins to limit before reaching the required SPL, consider adding more loudspeakers to the system.

ON/STATUS LED

The On/Status LED on the user panel indicates whether an Ultra XP loudspeaker is operating normally (green), overheating (yellow), or clipping (red).

Normal Operation (Green)

The On/Status LED is green during normal operation, when the loudspeaker is powered on.

Overheating and Limiter Threshold (Yellow)

The On/Status LED turns solid yellow when the loudspeaker's internal temperature reaches 75° C (167° F), indicating the unit is reaching its maximum heat dissipation. When the On/Status LED is yellow, a reduction in SPL is recommended. While the loudspeaker will continue to operate while the On/Status LED is yellow, the limiter threshold is lowered by 6 dB (causing the output level to also be reduced) to prevent the loudspeaker from overheating. When the internal temperature cools to 60° C (140° F), the On/Status LED changes from yellow to green and the limiter threshold returns to normal.

Amplifier Cooling System

Amplifiers for Ultra XP loudspeakers rely solely on natural convection for cooling from air flowing over their heat sinks. The efficient amplifier and heat sink design keeps temperatures low, even when units are operated at high ambient temperatures, in tightly packed configurations, and driven continuously at high output levels.

⚠ **CAUTION:** The Ultra XP loudspeaker's heat sink can reach temperatures up to 75° C (167° F) during extreme operation. Use extreme caution when approaching the rear of the loudspeaker.

Clipping on Input (Red)

The On/Status LED turns red when the loudspeaker's input stage clips. When the On/Status LED is red, the source level should be reduced to avoid distortion and to avoid overloading the amplifier.

CHAPTER 3: POWERING ULTRA XP LOUDSPEAKERS

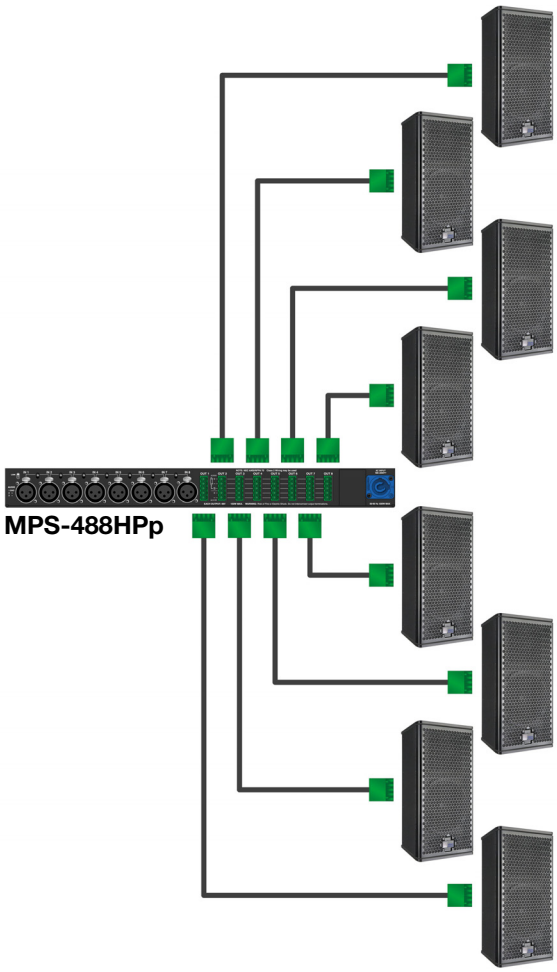
Ultra XP loudspeakers require an external MPS-488HP IntelligentDC power supply. The single-space 19-inch rack unit distributes DC power and balanced audio to up to eight Ultra XP loudspeakers, or other Meyer Sound IntelligentDC loudspeakers. Composite multiconductor cables, such as Belden 1502 or equivalent, can deliver both DC power and balanced audio to loudspeakers at cable lengths up to 150 feet with just 1 dB of loss in peak SPL using 18 AWG wire. Longer cable runs are possible with heavier gauges. Meyer Sound's RMS remote monitoring system is optionally available for the MPS-488HP.

TIP: For complete information on using the MPS-488HP IntelligentDC power supply, refer to the *MPS-488HP Operating Instructions* (PN 05.205.005.01).

To power Ultra XP loudspeakers with the MPS-488HP:

1. Power off the MPS-488HP.
2. Connect audio sources (from a mixer or processor) to the MPS-488HP channel inputs. Use balanced XLR cables.
3. Use the MPS-488HP Link switches to route channel inputs to the desired channel outputs. For information on the MPS-488HP Link switches, refer to the *MPS-488HP Operating Instructions* (PN 05.205.005.01).
4. Connect loudspeakers to the MPS-488HP channel outputs. Use composite cables (such as Belden 1502 or equivalent) wired for both DC power and balanced audio and outfitted with the appropriate connectors.

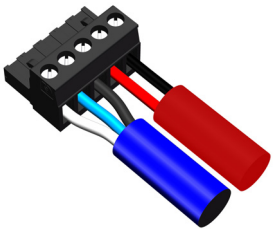
- When connecting loudspeakers equipped with Phoenix connectors to the MPS-488HPp power supply, use Phoenix 5-pin male to Phoenix 5-pin female cables.



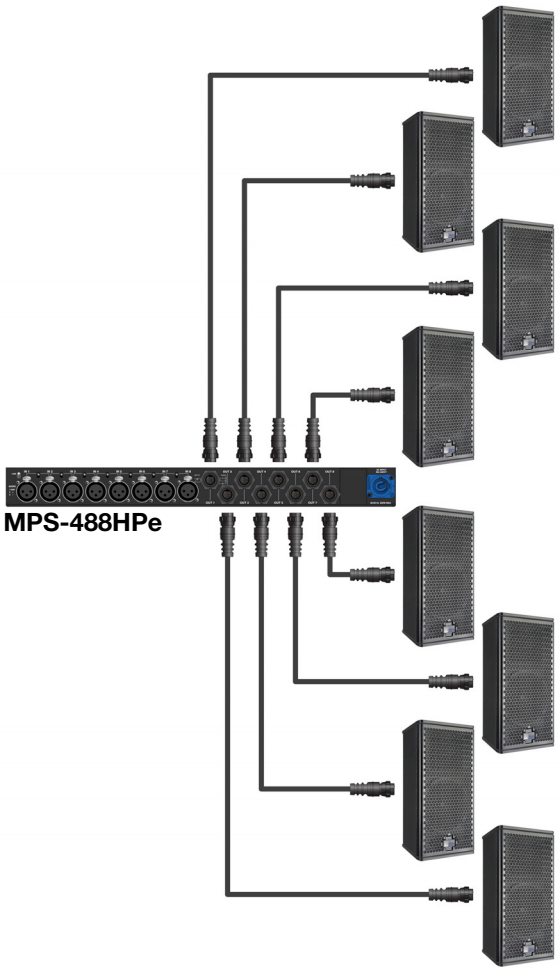
MPS-488HPp with Eight UPJunior-XP Loudspeakers

TIP: You can use two separate cables for loudspeaker connections: a 2-conductor cable for DC power and a 3-conductor cable for balanced audio, both attached to a single Phoenix connector on each cable end. This allows you to use a larger

gauge for the DC cable so you can achieve longer cable runs (see “Long Cable Runs with Separate Cable for DC Power and Audio” on page 11).



- When connecting loudspeakers equipped with EN3 connectors to the MPS-488HPe power supply, use EN3 5-pin male to EN3 5-pin female cables.



MPS-488HPe with Eight UPJunior-XP Loudspeakers

- To join two EN3 cables, one with an EN3 5-pin male cable mount connector to one with an EN3 5-pin female cable mount connector, use an EN3 5-pin female-to-male cable coupler (PN 28.163.033.01).

- When connecting loudspeakers equipped with ECO-M connectors to the MPS-488HPp power supply, use Phoenix 5-pin male to ECO-M 7-pin female cables.

CAUTION: Make sure loudspeaker cables are wired correctly. For details on assembling loudspeaker cables, refer to Appendix B, “Assembling Loudspeaker Cables.”

5. Power on the MPS-488HP and monitor the LEDs on the front panel to verify connections. For information on the MPS-488HP LEDs, refer to the *MPS-488HP Operating Instructions* (PN 05.205.005.01).
6. Check the On/Status LEDs on the loudspeaker rear user panels and verify they are green (ready to reproduce audio).
7. Enable output from the audio sources (from the mixer or processor) connected to the MPS-488HP.

CHAPTER 4: MOUNTING ULTRA XP LOUDSPEAKERS

IMPORTANT SAFETY CONSIDERATIONS

When installing Meyer Sound loudspeakers, the following precautions should always be observed:

- All Meyer Sound products must be used in accordance with local, state, federal, and industry regulations. It is the owner's and user's responsibility to evaluate the reliability of any rigging or mounting method for their application. Rigging should only be carried out by experienced professionals.
- Use mounting and rigging hardware that has been rated to meet or exceed the weight being hung.
- Make sure to attach mounting hardware to the building's structural components (studs or joists), and not just to the wall surface. Verify that the building's structure and the anchors used for the installation will safely support the total weight of the mounted loudspeakers.
- Use mounting hardware appropriate for the surface where the loudspeaker will be installed.
- Make sure bolts are tightened securely. Meyer Sound recommends using Loctite® on bolt threads and safety cables.
- Inspect mounting and rigging hardware regularly. Immediately replace any worn or damaged components.

ULTRA XP LOUDSPEAKER RIGGING OPTIONS

Ultra XP loudspeakers include the following rigging options.

Loudspeaker	Rigging
UPJ-1XP ultracompact VariO loudspeaker	Heavy-duty, corrosion-resistant 6061-T6 aluminum end plates with threaded M8 attachment points for QuickFly rigging options, basic eyebolt rigging, and third-party pole assemblies
UPJunior-XP ultracompact VariO loudspeaker	Heavy-duty, corrosion-resistant 6061-T6 aluminum end plates with threaded M8 attachment points for QuickFly rigging options, basic eyebolt rigging, and third-party pole assemblies
UPM-1XP ultracompact wide coverage loudspeaker	Three 3/8”-16 or metric M10 nut plates
UPM-2XP ultracompact narrow coverage loudspeaker	Three 3/8”-16 or metric M10 nut plates
UMS-1XP ultracompact subwoofer	Pole-mount receptacle; cabinet optionally available (UMS-SM subwoofer) with factory installed threaded end plates for single-mount configurations with the UMS-SM U-bracket

NOTE: The UMS-SM subwoofer is a version of the UMS-1XP subwoofer with threaded end plates for single-mount configurations with the UMS-SM U-bracket. The UMS-SM end plates are factory-installed with the U-bracket and not available as an upgrade option for the UMS-1XP.

U-BRACKETS

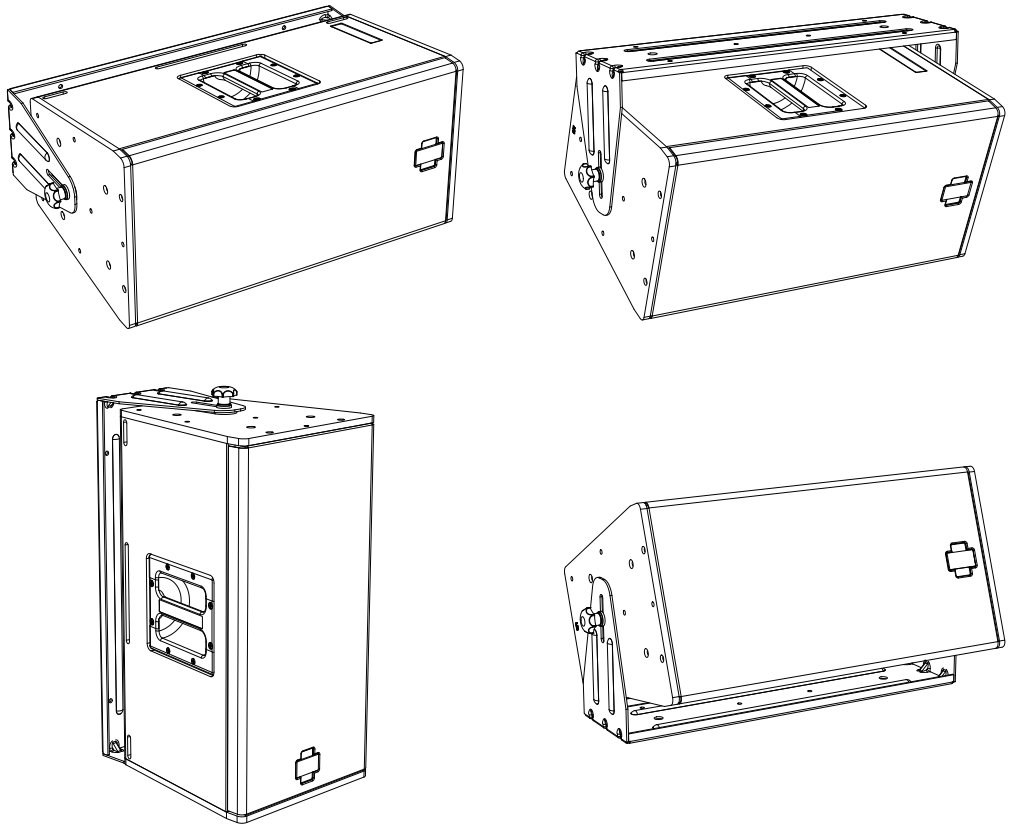
The following U-brackets are available for Ultra XP loudspeakers. All Ultra XP U-brackets can be mounted on walls and ceilings (under balcony and canopy areas), while some can also be mounted on floors (for stage monitoring and frontfill applications), trusses, and poles. The MUB-UPM U-bracket includes a single loudspeaker attachment point with a fixed mounting distance from the surface; the MUB-UPJ and MUB-UPJunior U-brackets include adjustable slots for variable mounting distances from the surface; the UMS-SM U-bracket includes two loudspeaker attachment points. The MUB-UPJ and MUB-UPJunior U-brackets can fly multiple cabinets with the use of array adapters (for more information, see “Array Adapters for UPJ-1XP and UPJunior-XP” on page 22).

Ultra XP U-Brackets

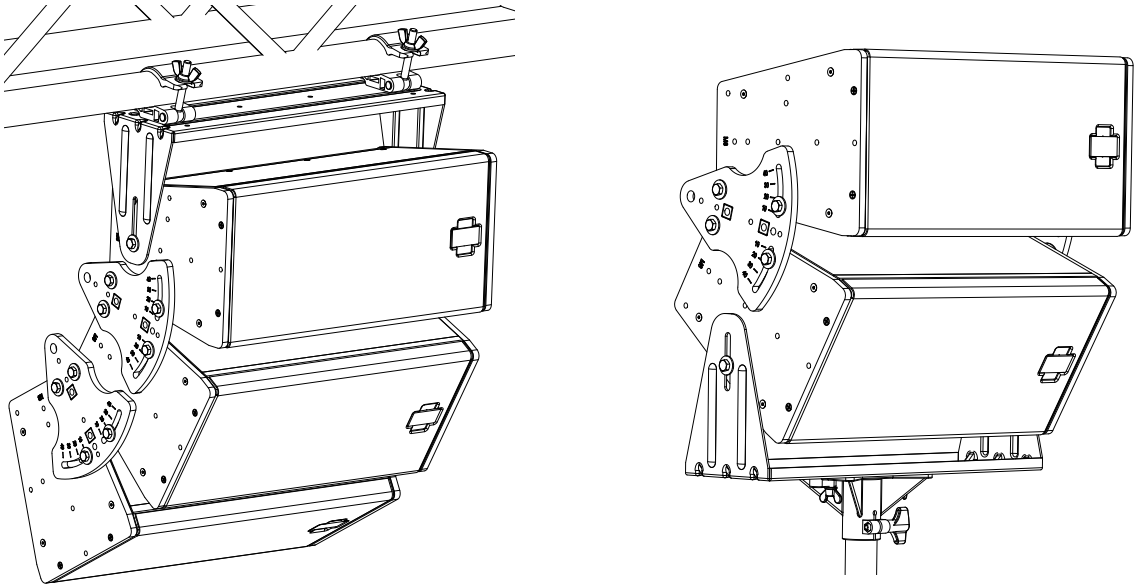
Model	Supported Loudspeakers	Maximum Number of Cabinets	Loudspeaker Attachment	Mounting Options/Notes
MUB-UPJ (PN 40.134.081.01)	UPJ-1P UPJ-1XP	1 (wall, floor) 2 (pole mount) 3 (ceiling, truss)	Adjustable slot	■ Mounts on walls, ceilings, floors, trusses, poles ■ Fasten U-bracket to mounting surface with the (4) 1/4” corner holes, or the (2) 1/2” center holes ■ Fasten U-bracket to pole mount adapters with the (2) 1/4” center holes ■ Flying multiple cabinets requires array adapter ■ When flying multiple cabinets, fasten U-bracket to the holes near rear of loudspeaker end plates ■ When flying single cabinets, fasten U-bracket to holes near the center of loudspeaker end plates
MUB-UPJunior (PN 40.173.110.01)	UPJunior UPJunior-XP	1 (wall, floor) 2 (ceiling, truss, pole mount)	Adjustable slot	■ Mounts on walls, ceilings, floors, trusses, poles ■ Fasten U-bracket to mounting surface with the (4) 1/4” corner holes, or the (2) 1/2” center holes ■ Fasten U-bracket to pole mount adapters with the (2) 1/4” center holes ■ Flying multiple cabinets requires array adapter ■ When flying multiple cabinets, fasten U-bracket to the holes near rear of loudspeaker end plates ■ When flying single cabinets, fasten U-bracket to holes near the center of loudspeaker end plates
MUB-UPM 3/8”-16 (PN 40.066.040.01),	UPM-1P, UPM-2P, UPM-1XP, UPM-2XP	1	Single fixed attachment point	■ Mounts on walls, ceilings, floors ■ Includes 3/8”-16 hardware
MUB-UPM M10 (PN 40.066.040.02)	UPM-1P, UPM-2P, UPM-1XP, UPM-2XP	1	Singled fixed attachment point	■ Mounts on walls, ceilings, floors ■ Includes M10 hardware
UMS-SM (PN 40.086.110.01)	UMS-1P SM, UMS-1XP SM	1	Two fixed attachment points	■ Mounts on walls, ceilings ■ Requires UMS-1XP SM cabinet with factory-installed threaded end plates

⚠ **CAUTION:** The (2) 1/4” center holes on the MUB-UPJ and MUB-UPJunior U-brackets should only be used for securing the bracket to pole-mount adapters. These holes are not rated for flying loudspeakers.

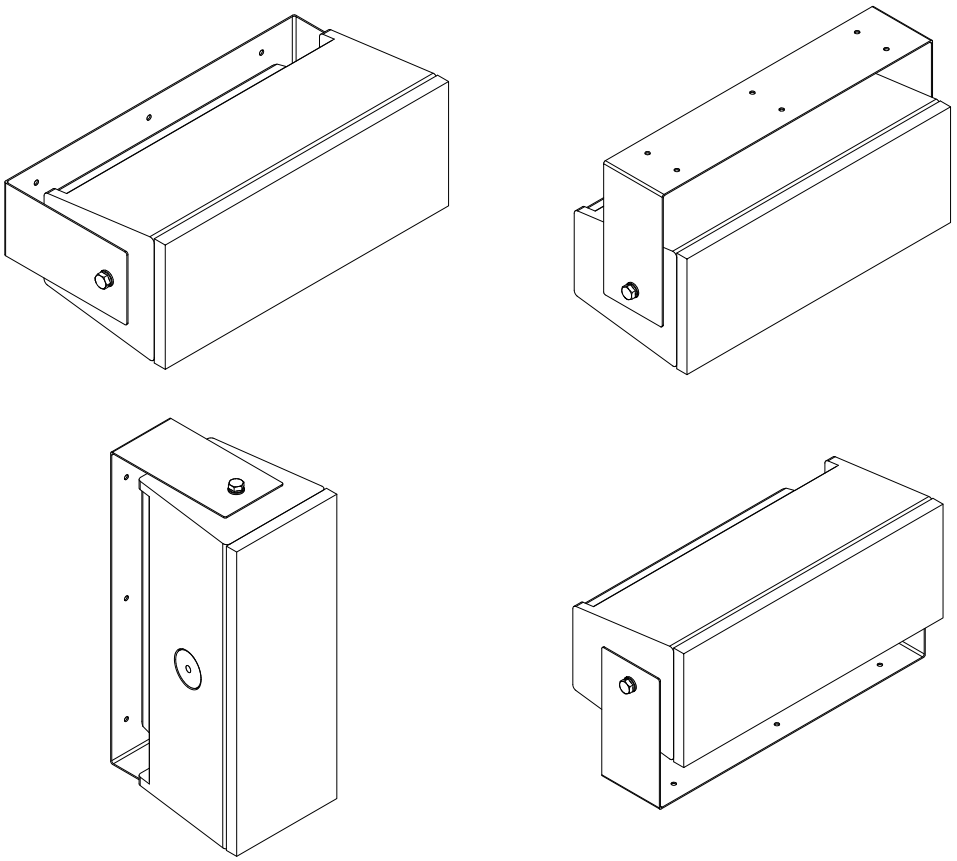
NOTE: The UMS-1XP SM subwoofer includes threaded end plates for single-mount configurations with the UMS-SM U-bracket. The UMS-1XP SM end plates are factory-installed with the U-bracket and not available as an upgrade option for the UMS-1XP.



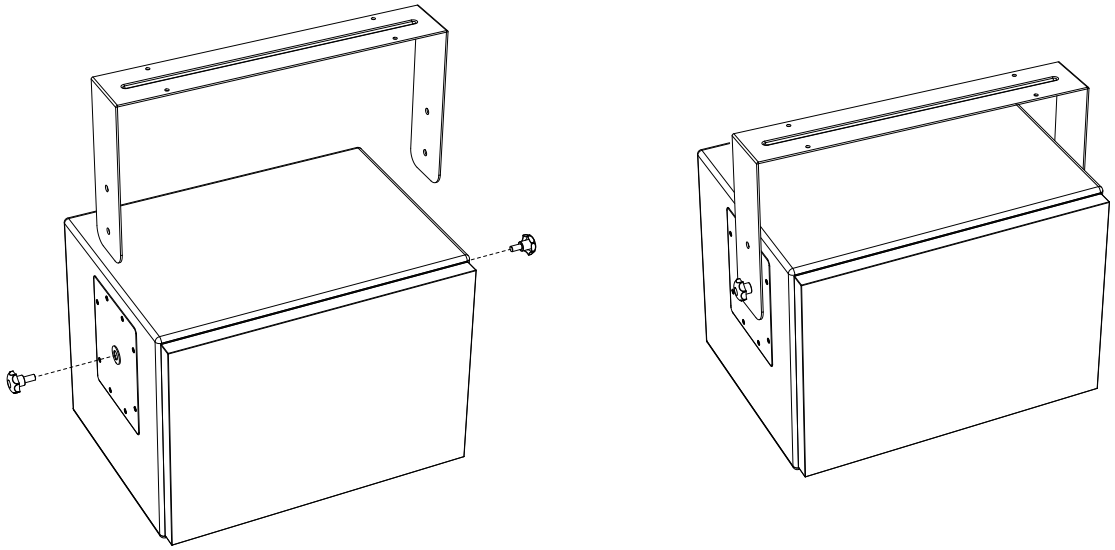
MUB-UPJ U-Bracket, Wall Mount, Vertical and Horizontal (Left), Ceiling Mount and Floor Mount (Right)



MUB-UPJunior U-Bracket with Array Adapters, Truss-Mounted (Left), Pole-Mounted (Right)



MUB-UPM U-Bracket, Wall Mount, Vertical and Horizontal (Left), Ceiling Mount and Floor Mount (Right)



UMS-SM U-Bracket, Exploded View (Left), Installed (Right)

MOUNTING YOKES

The following mounting yokes are available for the UPJ-1XP, UPJunior-XP, UPM-1XP, and UPM-2XP loudspeakers. The yokes suspend a single loudspeaker and allow a wide range of horizontal and vertical adjustment. The yokes for the UPJ-1XP and UPJunior-XP attach to the bottom end plate. The yokes for the UPM-1XP and UPM-2XP attach to the top and bottom nut plates and include both 3/8"-16 and M10 hardware. A "C" or "G" hanging clamp and steel safety cable (not included) are required to suspend the loudspeakers with yokes.

Ultra XP Mounting Yokes

Model	Supported Loudspeakers	Maximum Number of Cabinets	Loudspeaker Attachment	Mounting Options/Notes
MYA-UPJ (PN 40.134.035.01)	UPJ-1P UPJ-1XP	1	Bottom	■ Requires "C" or "G" hanging clamp and steel safety cable ■ Accommodates hanging clamps with standard 1/2" (12 mm) bolts
MYA-UPJunior (PN 40.173.044.01)	UPJunior UPJunior-XP	1	Bottom	■ Requires "C" or "G" hanging clamp and steel safety cable ■ Accommodates hanging clamps with standard 1/2" (12 mm) bolts
MYA-UPM (PN 40.084.038.01)	UPM-1P, UPM-2P, UPM-1XP, UPM-2XP	1	Top/Bottom	■ Requires "C" or "G" hanging clamp and steel safety cable ■ Accommodates hanging clamps with standard 1/2" (12 mm) bolts ■ Includes both 3/8"-16 and M10 hardware ■ Secure the yoke by tightening the bottom bolt first and then the top ■ Do not overtorque the bolts as this may damage the cabinet

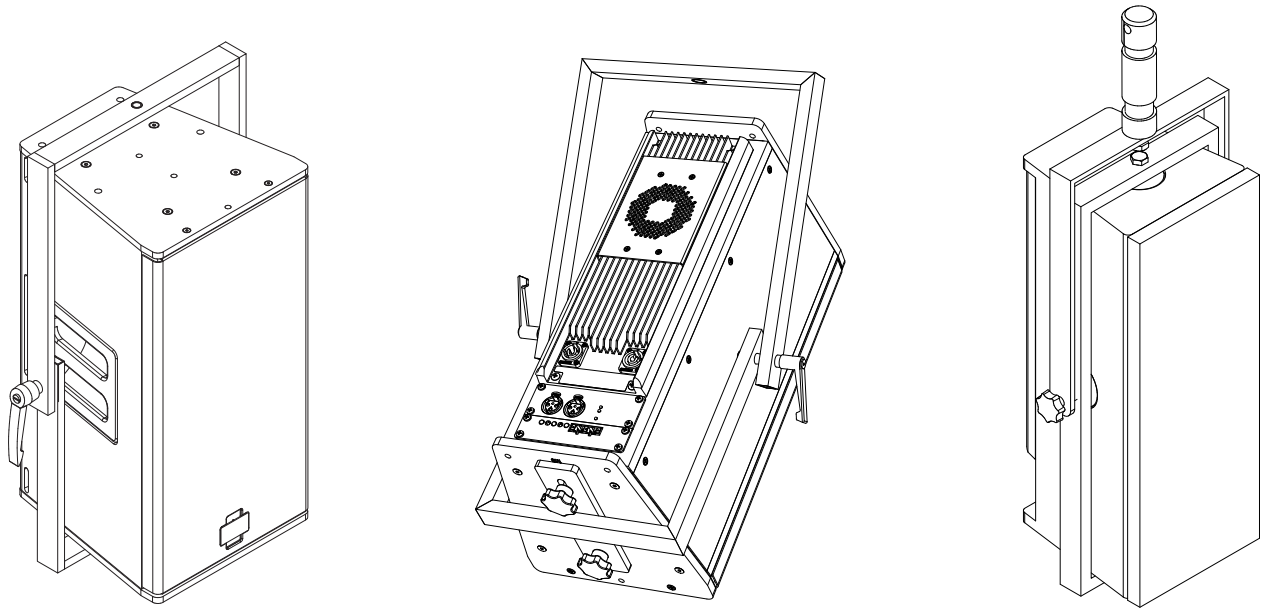


Figure 2: MYA-UPJ Mounting Yoke (Left), MYA-UPJunior Mounting Yoke (Center), MYA-UPM Mounting Yoke (Right)

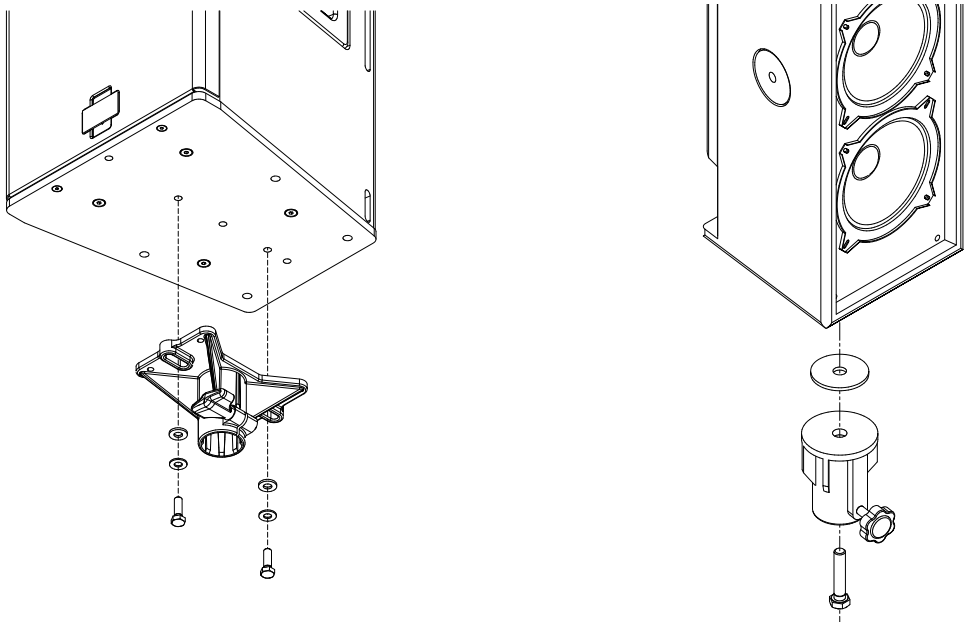
POLES AND POLE-MOUNT ADAPTERS

The following poles and pole-mount adapters are available for Ultra XP loudspeakers. The MSA-UPM pole-mount adapter mounts a single UPM-1XP or UPM-2XP loudspeaker. The (third-party) Ultimate Support BMB-200K pole-mount adapter mounts a single UPJ-1XP or UPJunior-XP loudspeaker; it can also mount two cabinets with a U-bracket and array adapter kit (see Figure 2 on page 19). The MPS-UMS pole allows a single Ultra XP loudspeaker to be mounted above the UMS-1XP subwoofer (Figure 3 on page 21).

Ultra XP Pole and Pole Mount Adapters

Model	Supported Loudspeakers	Maximum Number of Cabinets	Loudspeaker Attachment	Mounting Options/Notes
Ultimate Support **BMB-200K** Pole-Mount Adapter (Third Party)	UPJ-1P, UPJunior, UPJ-1XP, UPJunior-XP	2	Bottom	■ Mounts on 1-1/2” (38 mm) diameter poles (not provided) ■ Mounting two cabinets requires U-bracket and array adapter
MSA-UPM Pole-Mount Adapter (PN 40.086.013.01)	UPM-1P, UPM-2P, UPM-1XP, UPM-2XP	1	Bottom	■ Mounts on 1-3/8” (35 mm) diameter poles (not provided) ■ Includes both 3/8”-16 and M10 hardware
MPS-UMS Pole (PN 40.086.014.02)	UMS-1P, UMS-1XP	1	Top (pole-mount receptacle)	■ 48-inch (1,219 mm) pole ■ 1-3/8” (35 mm) to 1-1/2” (38 mm) adjustable diameter
MPK-UMS Pole-Mount Kit (PN 40.086.014.01)	UPM-1P, UPM-2P, UPM-1XP, UPM-2XP UMS-1P, UMS-1XP	1	–	■ Includes MPS-UMS pole and MSA-UPM pole-mount adapter

⚠ **CAUTION:** When pole-mounting Ultra XP loudspeakers with third-party hardware, make sure the pole and pole-mount adapter have been rated to support the total weight of the loudspeaker. Observe all safety precautions specified by the manufacturer.



Ultimate Support BMB-200K Pole-Mount Adapter with UPJ-1XP (Left), MSA-UPM Pole-Mount Adapter with UPM-1XP (Right)

With the appropriate pole and pole-mount hardware, the UPJ-1XP, UPJunior-XP, UPM-1XP, and UPM-2XP can be mounted above the UMS-1XP subwoofer.

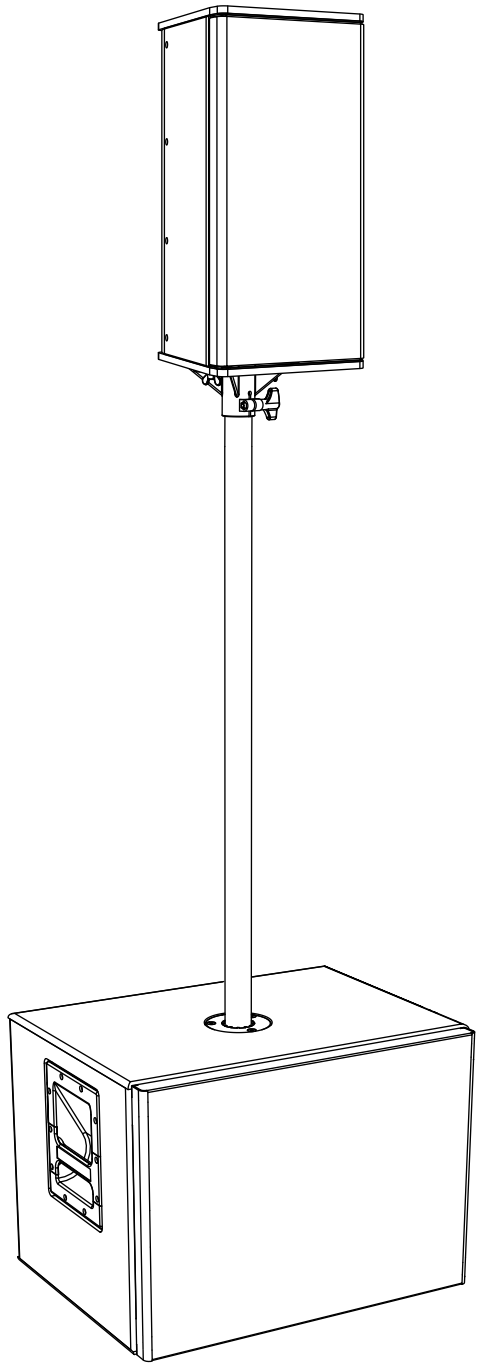
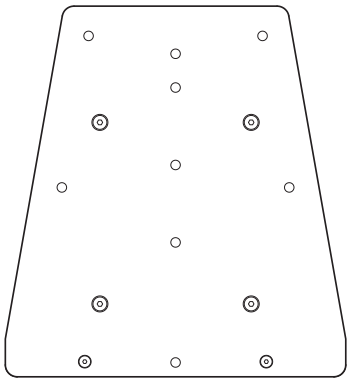


Figure 3: UMS-1XP with MPS-UMS Pole and UPJunior-XP

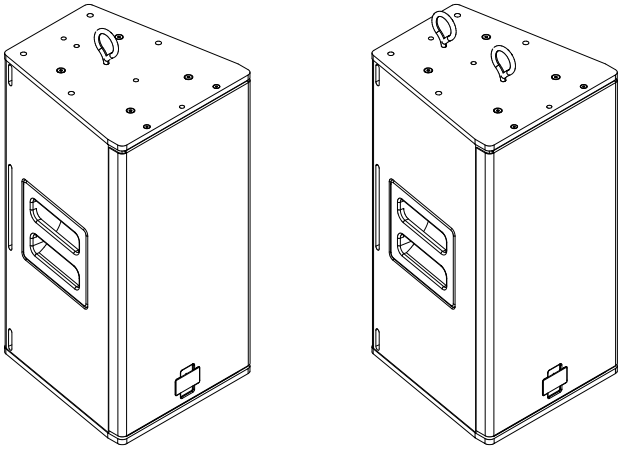
EYEBOLT RIGGING FOR UPJ-1XP AND UPJUNIOR-XP

The UPJ-1XP and UPJunior-XP ship with two M8 threaded, 20 mm eyebolts. The eyebolts attach to the top or bottom end plates and can be used to suspend the loudspeaker.



Ultra XP Top Plate with Threaded Holes for Eyebolts

A single loudspeaker can be suspended with one eyebolt. However, two eyebolts provide more safety and stability, as well the capability of aiming and tilting the loudspeaker for targeted coverage.



Ultra XP with One Eyebolt (Left) and Two Eyebolts (Right)

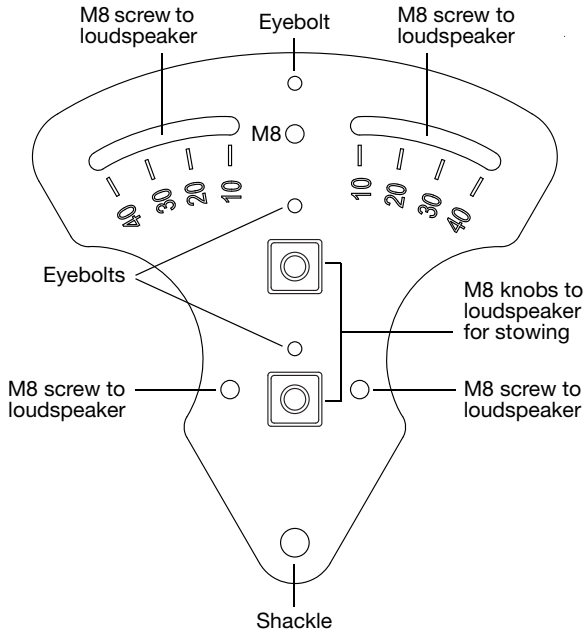
NOTE: Up to two UPJ-1XPs UPJunior-XPs, oriented vertically, can be suspended with the eyebolts supplied by Meyer Sound at a 7:1 safety factor. For this configuration, the top loudspeaker would have two eyebolts installed on its top plate and two eyebolts installed on its bottom plate, for connecting to the second loudspeaker. Additional M8 eyebolts are available from Meyer Sound.

ARRAY ADAPTERS FOR UPJ-1XP AND UPJUNIOR-XP

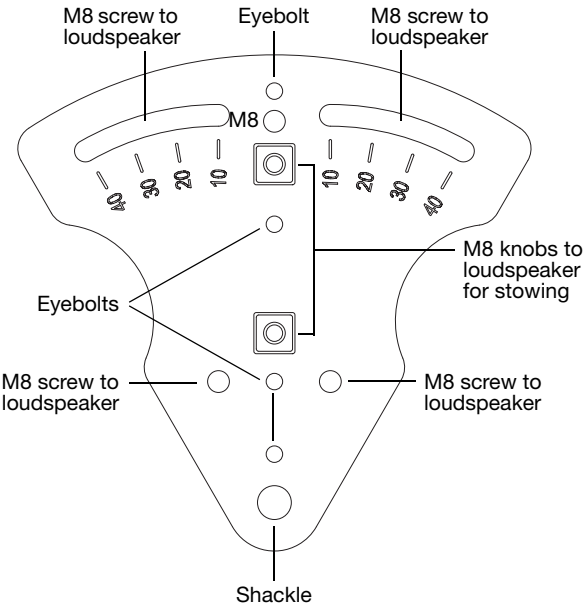
Array adapter plates are available for the UPJ-1XP (MAAM-UPJ) and UPJunior-XP (MAAM-UPJunior) to form horizontal and vertical arrays of up to three loudspeakers. The front adjustment slot is used to adjust the distance between the loudspeakers to achieve the desired splay angle (from 20 to 80 degrees) and coverage. The array adapter kits include two array adapter plates, eight M8 screws and washers, and four M8 knobs (for floor monitor use only). A single kit can array two UPJ-1XPs or two UPJunior-XPs; two kits are required for an array of three loudspeakers.

⚠ **CAUTION:** The MAAM-UPJ array adapter supports a maximum of three UPJ-1XP loudspeakers in an array.

⚠ **CAUTION:** The MAAM-UPJunior array adapter supports a maximum of three UPJunior-XP loudspeakers in an array.

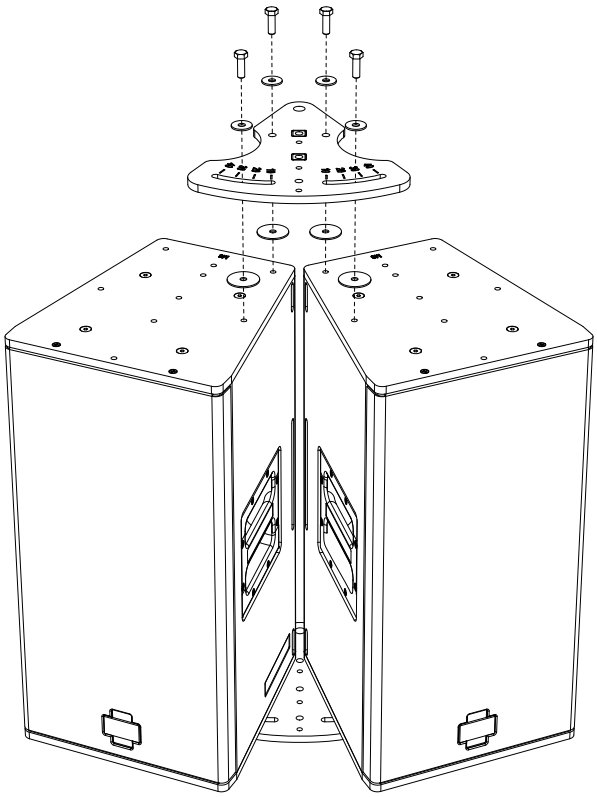


MAAM-UPJ Array Adapter Plate (for UPJ-1XP Loudspeakers)



MAAM-UPJunior Array Adapter Plate (for UPJunior-XP Loudspeakers)

Arrays are assembled by attaching the array adapter plates to the top and bottom end plates of the loudspeakers and securing them with the included M8 screws and washers.



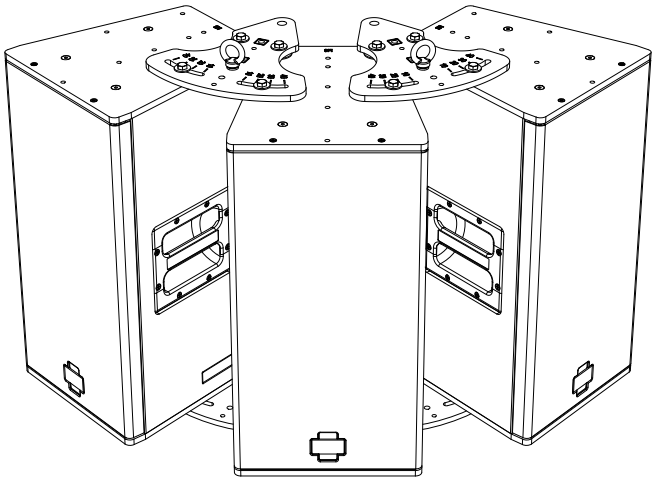
MAAM-UPJ with UPJ-1XPs, Exploded View

Array adapters can also be used to position UPJ-1XPs and UPJunior-XPs as floor monitors with adjustable angles. When positioning the loudspeakers as floor monitors, the array adapter plates attach to the loudspeakers with the included M8 knobs.

CAUTION: The M8 knobs included with array adapters should only be used to secure the plates to the loudspeakers when positioning them as floor monitors. The M8 knobs should not be used for flown applications.

Horizontal Arrays

Horizontal arrays with the array adapter can be flown by attaching eyebolts to the loudspeaker end plates or directly to the array adapter plates. Shackles can also be attached to the adapter plate's rear pickup holes for additional support or to provide control over the array's vertical tilt.

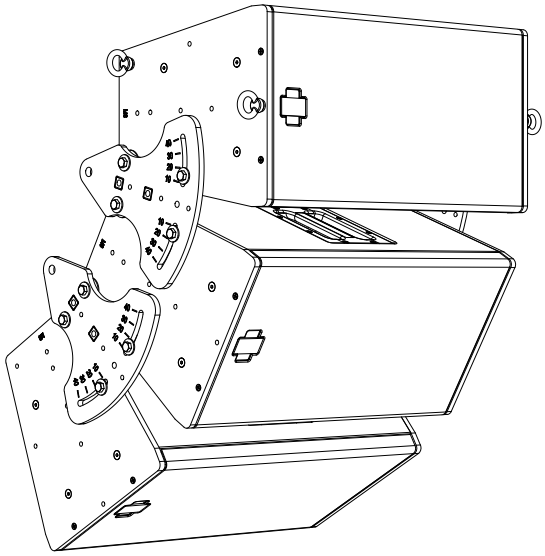


MAAM-UPJ with UPJ-1XP Horizontal Array and Eyebolts

TIP: To create optimum coverage in horizontal arrays, the splay angles between loudspeakers should be 50 degrees when the VariO horns are in the 80-degree horizontal by 50-degree vertical position (this yields a horizontal coverage of 130 degrees). Angles less than 50 degrees between loudspeakers can cause too much interaction between the loudspeakers, while angles greater than 50 degrees can yield holes in the coverage.

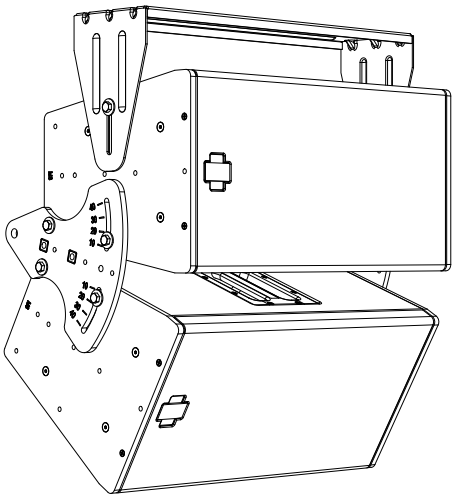
Vertical Arrays

Vertical arrays with the array adapter can be flown by attaching eyebolts to the loudspeaker end plates or directly to the array adapter plates. Shackles can also be attached to the adapter plate's rear pickup holes for additional support or to provide control over the vertical tilt.



MAAM-UPJ, Vertical Array with Eyebolts

Vertical arrays of up to three loudspeakers with the array adapter can be ceiling mounted by attaching a U-bracket to the top loudspeaker.



MAAM-UPJ, Vertical Array Ceiling-Mounted

NOTE: When flying an array of Ultra XPs from the MUB-UPJ U-bracket, the bracket should be fastened to the holes toward the rear of the loudspeaker plates, to compensate for the shift in center of gravity. In addition, shackles can be attached to

the array adapter plate's rear pickup holes for additional support or to provide control over the vertical tilt.

TIP: To create optimum coverage in vertical arrays, the splay angles between loudspeakers should be 30 degrees when the VariO horns are in the 80-degree horizontal by 50-degree vertical position (this yields a vertical coverage of 80 degrees). Angles less than 30 degrees between loudspeakers can cause too much interaction between the loudspeakers, while angles greater than 30 degrees can yield holes in the coverage.

Floor Monitoring with Array Adapters

The array adapters can be used to position the UPJ-1XP and UPJunior-XP loudspeakers as floor monitors with the front adjustment slot being used to adjust the angle of the loudspeaker. The following illustrations show the stowed position, for when the loudspeaker is not in use (Figure 4), as well as some of the more common angle configurations.

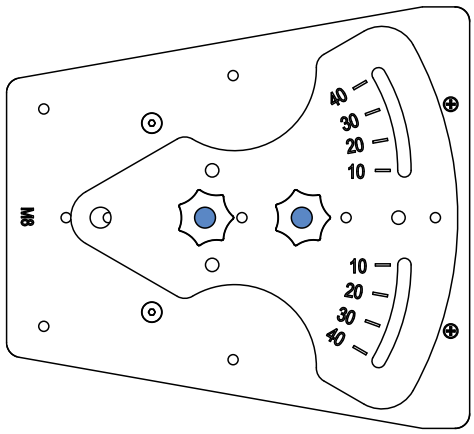
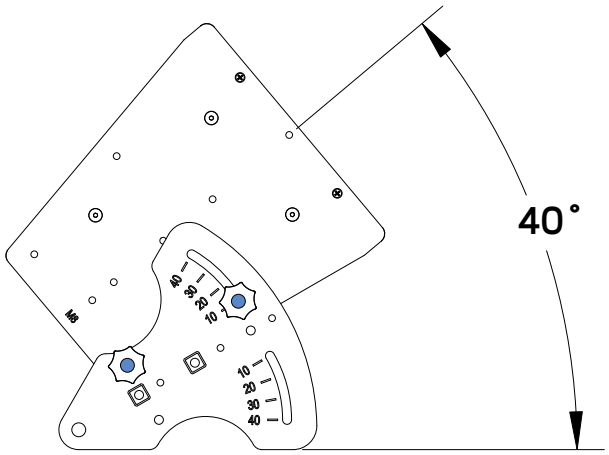
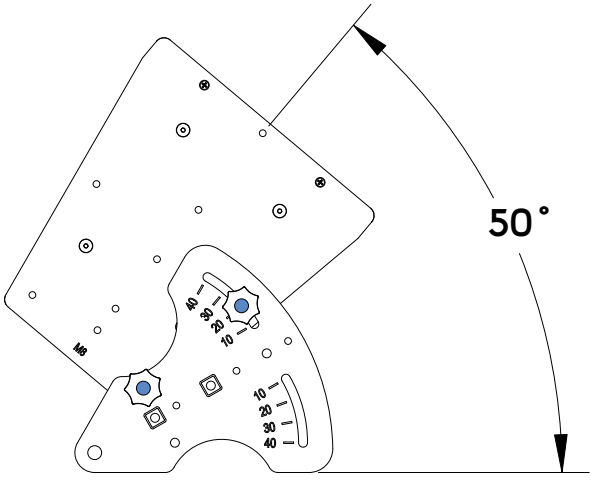


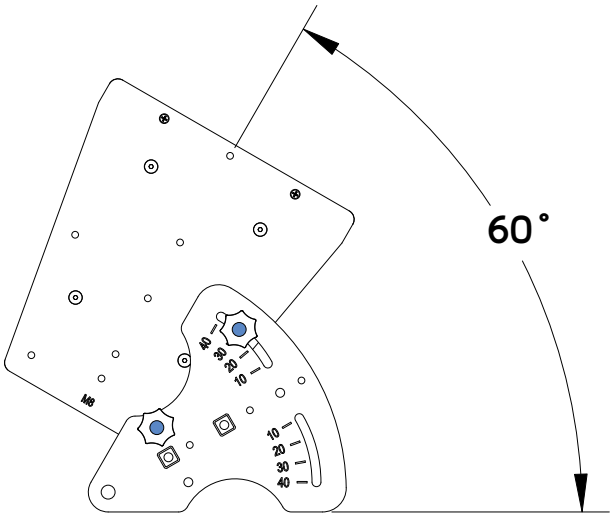
Figure 4: MAAM-UPJ with UPJ-1XP Stowed



MAAM-UPJ with UPJ-1XP at 40 Degrees



MAAM-UPJ with UPJ-1XP at 50 Degrees



MAAM-UPJ with UPJ-1XP at 60 Degrees

APPENDIX A: ULTRA XP ACCESSORIES

CABLE CONNECTORS AND ADAPTERS

The following cable connectors and adapters are available from Meyer Sound.

Phoenix and EN3 Cable Connectors and Adapters

Part Number	Connector/Adapter	Use
484.065	Phoenix 5-pin female cable mount connector	Connects to MPS-488HPp channel outputs and loudspeakers equipped with Phoenix 5-pin male panel mount connectors
468.069	EN3 5-pin female cable mount connector	Connects to loudspeakers equipped with EN3 5-pin male panel mount connectors
468.071	EN3 5-pin male cable mount connector	Connects to MPS-488HPe channel outputs
468.072	EN3 5-pin female inline cable adapter	Connects to EN3 5-pin male cable mount connectors for assembling extension cables
468.073	EN3 5-pin male inline cable adapter	Connects to EN3 5-pin female cable mount connectors for assembling extension cables
468.081	ECOM 7-pin female cable mount connector	Connects to loudspeakers equipped with ECOM 7-pin male panel mount connectors
28.163.033.01	Cable coupler EN3 5-pin female-to-male (5-inch, 0.12 m)	Joins two cables: one with an EN3 5-pin male cable mount connector to one with an EN3 5-pin female cable mount connector

LOUDSPEAKER CABLES

The following loudspeaker cables are available from Meyer Sound and can be used to connect Ultra XP loudspeakers to MPS-488HP power supplies.

NOTE: Phoenix and EN3 loudspeaker cables and bulk cable use Belden 1502R (regular) or Belden 1502P (plenum) cable. Belden 1502 is a composite cable comprised of two 18 AWG wires for DC power, two 22 AWG wires for balanced audio, and one 24 AWG wire for audio shield.

Phoenix and EN3 Loudspeaker Cables

Part Number	Cable	Color	Coating	Length
524.014	Bulk (no connectors)	Black	Regular	500 ft spool
524.015	Bulk (no connectors)	White	Plenum	500 ft spool
28.163.009.01	EN3 5-pin female to pigtail	Black	Regular	10 ft
28.163.009.11	EN3 5-pin female to pigtail	White	Plenum	10 ft
28.163.009.21	EN3 5-pin female to EN3 5-pin male	Black	Regular	10 ft
28.163.009.22				20 ft
28.163.009.23				30 ft
28.163.009.24				50 ft
28.163.009.25				100 ft
28.163.009.26				150 ft

Phoenix and EN3 Loudspeaker Cables

Part Number	Cable	Color	Coating	Length
28.163.009.31	EN3 5-pin female to EN3 5-pin male	White	Plenum	10 ft
28.163.009.32				20 ft
28.163.009.33				30 ft
28.163.009.34				50 ft
28.163.009.35				100 ft
28.163.009.36				150 ft
28.163.009.41	EN3 5-pin female to Phoenix 5-pin female	Black	Regular	10 ft
28.163.009.42				20 ft
28.163.009.43				30 ft
28.163.009.44				50 ft
28.163.009.45				100 ft
28.163.009.46				150 ft
28.163.009.51	EN3 5-pin female to Phoenix 5-pin female	White	Plenum	10 ft
28.163.009.52				20 ft
28.163.009.53				30 ft
28.163.009.54				50 ft
28.163.009.55				100 ft
28.163.009.56				150 ft

RAIN HOODS

The following rain hoods are available from Meyer Sound.

Ultra XP Rain Hoods

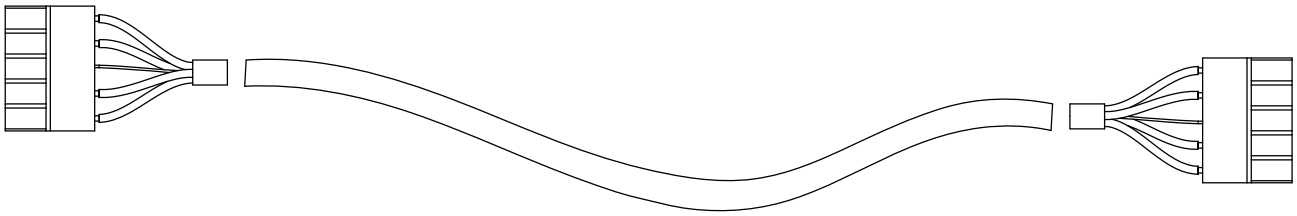
Part Number	Rain Hood	Use
40.196.062.02	Vertical Rain Hood	To be used with vertically oriented Ultra XP loudspeakers: UPJ-1XP, UPJunior-XP, UPM-1XP, UPM-2XP, UMS-1XP
40.196.062.01	Horizontal Rain Hood	To be used with horizontally oriented Ultra XP loudspeakers: UPJ-1XP, UPJunior-XP, UPM-1XP, UPM-2XP, UMS-1XP
40.196.062.03	Reversed Rain Hood	To be used with weather-protected UPM-1XP and UPM-2XP loudspeakers

APPENDIX B: ASSEMBLING LOUDSPEAKER CABLES

⚠ **CAUTION:** When wiring Ultra XP loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the Ultra XP loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

ASSEMBLING PHOENIX-TO-PHOENIX LOUDSPEAKER CABLES

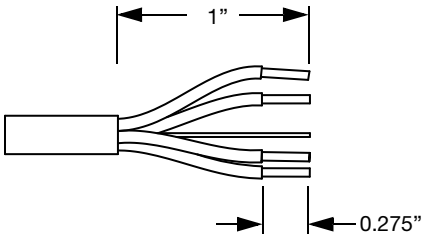
When connecting loudspeakers equipped with Phoenix connectors to the MPS-488HPp power supply, you need a Phoenix 5-pin female to Phoenix 5-pin female cable. The following procedure documents how to assemble this cable.



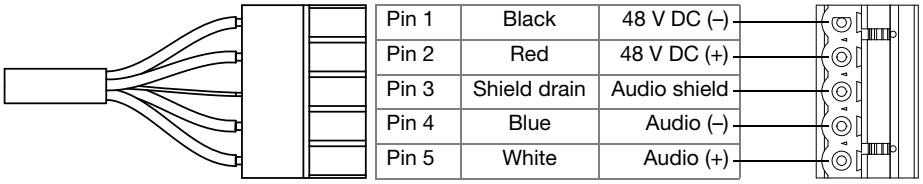
Assembled Phoenix-to-Phoenix Cable

To assemble a Phoenix-to-Phoenix cable:

1. If the cable has not yet been stripped, strip one end of the cable. Strip the outer shielding by 1 inch and then strip the black, red, blue, and white wires by 0.275 inch.



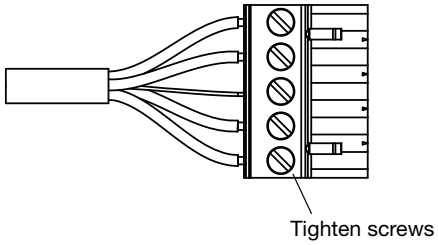
2. Insert the five exposed conductors into the five cable holes in a Phoenix 5-pin female cable mount connector. Use the following wiring scheme.



Pin 1	Black	48 V DC (–)
Pin 2	Red	48 V DC (+)
Pin 3	Shield drain	Audio shield
Pin 4	Blue	Audio (–)
Pin 5	White	Audio (+)

Pin Destinations for Phoenix 5-Pin Female Cable Mount Connector

3. Secure the conductors by tightening the five screws in the Phoenix cable mount connector. Screws should be torqued to 5–6 Nm(4.4–5.3 In-Lbs).

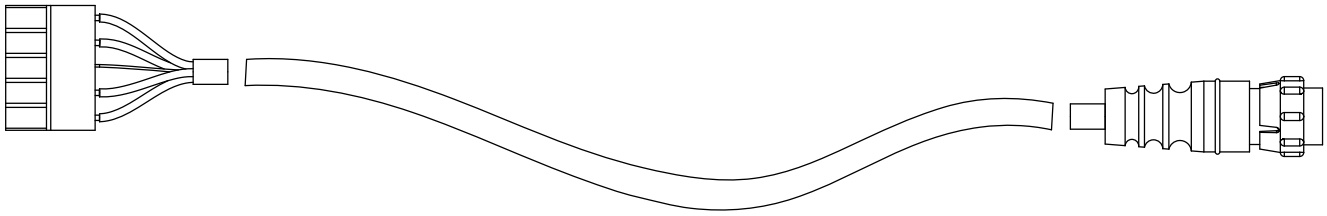


⚠ **CAUTION:** Screws should not be inserted into the Phoenix connector while the connector rests in a mating plug. Doing so will damage the contacts. During assembly, the Phoenix connector should only be held in place externally.

4. Repeat the previous steps and attach the other end of the cable to another Phoenix 5-pin female cable mount connector.
5. Verify the wiring polarity is correct for both cable ends.

ASSEMBLING PHOENIX-TO-EN3 LOUDSPEAKER CABLES

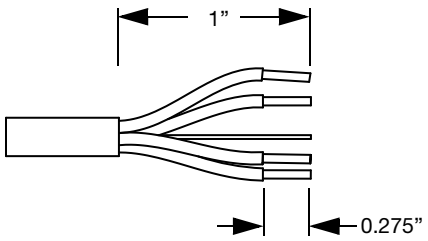
When connecting loudspeakers equipped with EN3 connectors to the MPS-488HPp power supply, you need a Phoenix 5-pin female to EN3 5-pin female cable. The following procedure documents how to assemble this cable. If you are starting with an EN3-to-pigtail cable, you can skip steps 4–7 in this procedure.



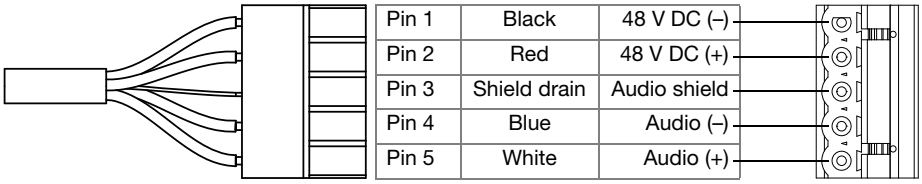
Assembled Phoenix-to-EN3 Cable

To assemble a Phoenix-to-EN3 cable:

1. If the cable has not yet been stripped, strip one end of the cable. Strip the outer shielding by 1 inch and then strip the black, red, blue, and white wires by 0.275 inch.

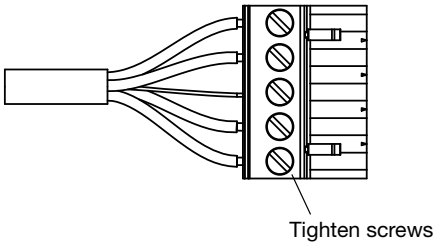


2. Insert the five exposed conductors into the five cable holes in a Phoenix 5-pin female cable mount connector. Use the following wiring scheme.



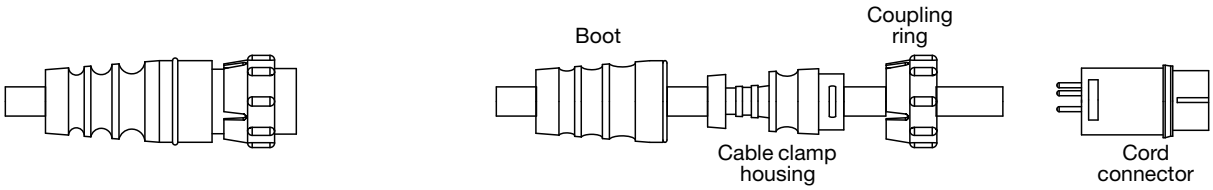
Pin Destinations for Phoenix 5-Pin Female Cable Mount Connector

3. Secure the conductors by tightening the five screws in the Phoenix cable mount connector. Screws should be torqued to 5–6 Nm(4.4–5.3 In-Lbs).



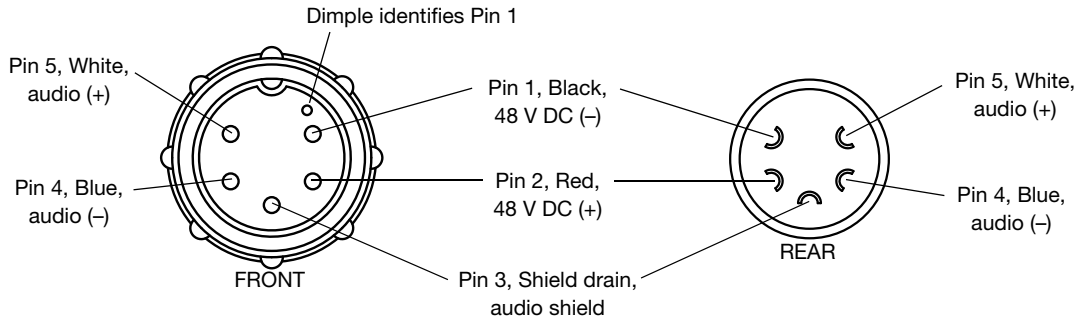
⚠ **CAUTION:** Screws should not be inserted into the Phoenix connector while the connector rests in a mating plug. Doing so will damage the contacts. During assembly, the Phoenix connector should only be held in place externally.

4. If the other (EN3) end of the cable has not been stripped, strip the outer shielding 1 inch and then strip the black, red, blue, and white wires 0.275 inch.
5. Disassemble the EN3 5-pin female connector and feed the stripped cable through the boot, cable clamp housing, and coupling ring.



EN3 5-Pin Female Cable Mount Connector, Assembled (Left), Disassembled (Right)

6. Solder the five exposed conductors to the five pins on the EN3 cord connector using the following wiring scheme.


Dimple identifies Pin 1
Pin 5, White, audio (+)
Pin 1, Black, 48 V DC (–)
Pin 5, White, audio (+)
Pin 4, Blue, audio (–)
Pin 2, Red, 48 V DC (+)
Pin 4, Blue, audio (–)
FRONT
REAR
Pin 3, Shield drain, audio shield

Pin Destinations for EN3 5-Pin Female Cable Mount Connector

7. Reassemble the EN3 5-pin female connector:

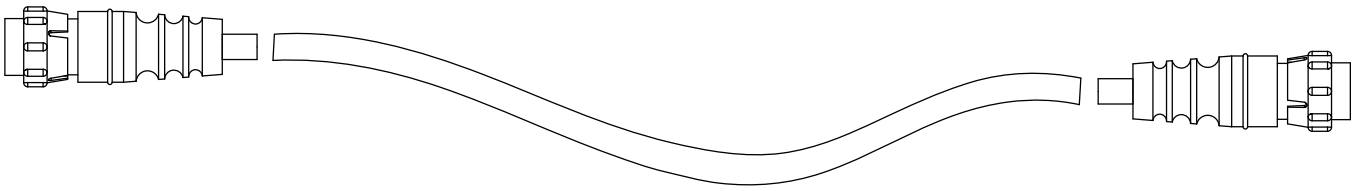
- Align the coupling ring's side notches with the cord connector's side notches and slide the couple ring onto the cord connector.
- Carefully insert the end of the cable clamp housing into the cord connector until it locks into place. Snap the cable clamps in the cable clamp housing into their compartments.
- Slide the boot forward so it covers the cable clamp housing completely.

8. Verify the wiring polarity is correct for both cable ends.

ASSEMBLING EN3-TO-EN3 LOUDSPEAKER CABLES

When connecting loudspeakers equipped with EN3 connectors to the MPS-488HPe power supply, you need an EN3 5-pin female to EN3 5-pin male cable. The following procedure documents how to assemble this cable. If you are starting with an EN3-to-pigtail cable, you can skip step 5 in this procedure.

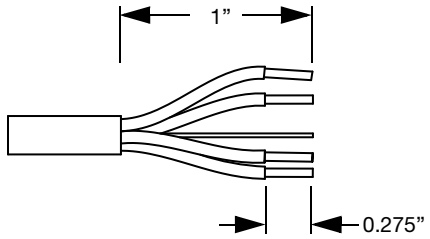
NOTE: Cable mount connectors cannot connect to other cable mount connectors. Cable mount connectors can only connect to panel mount connectors (like those on the MPS-488HPe) or inline connectors. To extend cables with EN3 connectors on both ends you can use an EN3 5-pin female-to-male cable coupler.



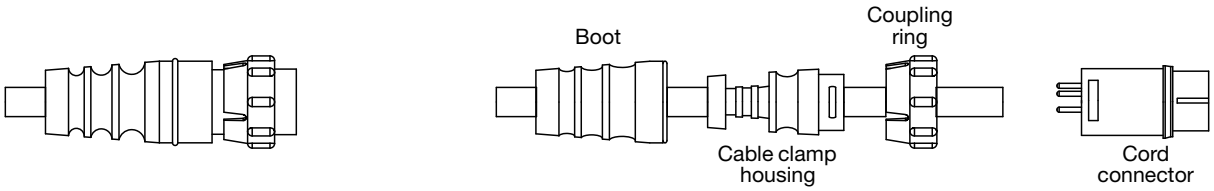
Assembled EN3-to-EN3 Cable

To assemble an EN3-to-EN3 loudspeaker cable:

1. If the cable has not yet been stripped, strip one end of the cable. Strip the outer shielding by 1 inch and then strip the black, red, blue, and white wires by 0.275 inch.

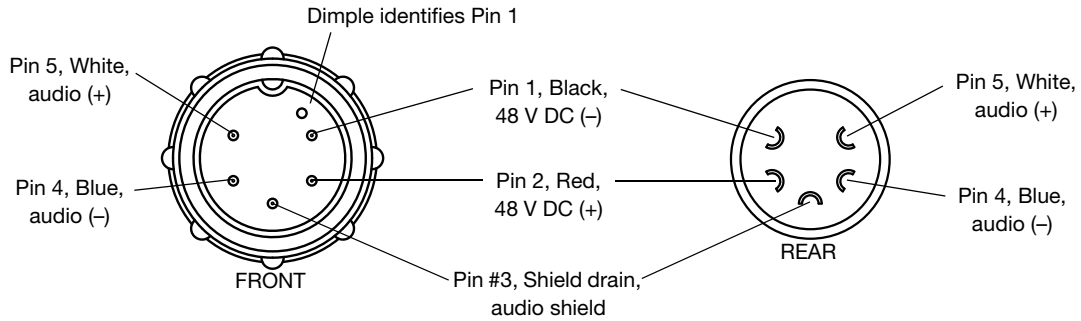


2. Disassemble the EN3 5-pin male connector and feed the stripped cable through the boot, cable clamp housing, and coupling ring.



Disassembled EN3 5-Pin Male Cable Mount Connector

3. Solder the five exposed conductors to the five pins on the EN3 cord connector using the following wiring scheme.

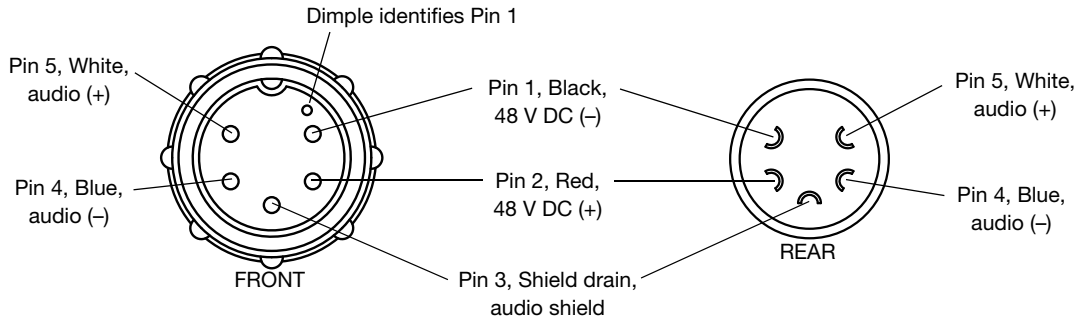

Dimple identifies Pin 1
Pin 5, White, audio (+)
Pin 1, Black, 48 V DC (–)
Pin 5, White, audio (+)
Pin 4, Blue, audio (–)
Pin 2, Red, 48 V DC (+)
Pin 4, Blue, audio (–)
FRONT
REAR
Pin #3, Shield drain, audio shield

Pin Destinations for EN3 5-Pin Male Cable Mount Connector

4. Reassemble the EN3 5-pin male connector:

- Align the coupling ring’s side notches with the cord connector’s side notches and slide the couple ring onto the cord connector.
- Carefully insert the end of the cable clamp housing into the cord connector until it locks into place. Snap the cable clamps in the cable clamp housing into their compartments.
- Slide the boot forward so it covers the cable clamp housing completely.

5. Repeat the previous steps to attach the EN3 5-pin female connector to the other end of the cable.

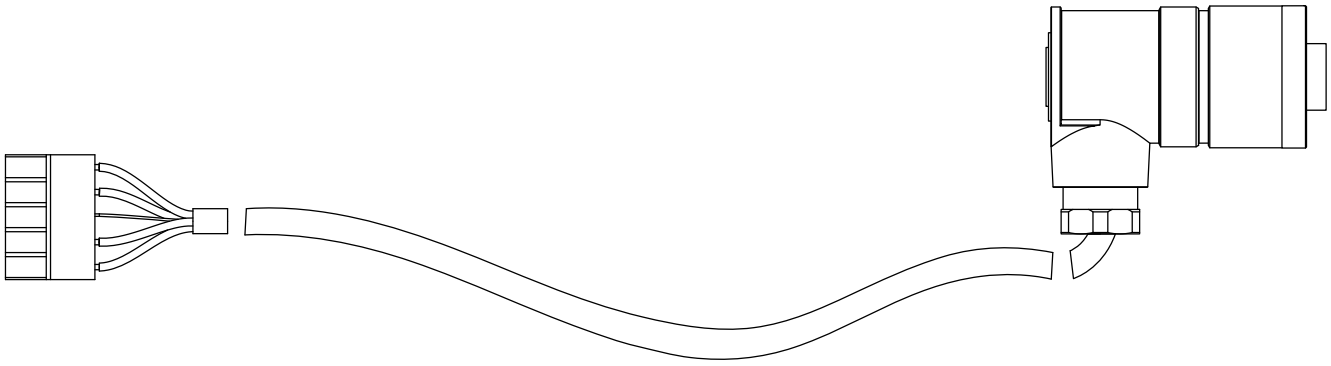

Dimple identifies Pin 1
Pin 5, White, audio (+)
Pin 1, Black, 48 V DC (–)
Pin 5, White, audio (+)
Pin 4, Blue, audio (–)
Pin 2, Red, 48 V DC (+)
Pin 4, Blue, audio (–)
FRONT
REAR
Pin 3, Shield drain, audio shield

Pin Destinations for EN3 5-Pin Female Cable Mount Connector

6. Verify the wiring polarity is correct for both cable ends.

ASSEMBLING PHOENIX-TO-ECO-M LOUDSPEAKER CABLES

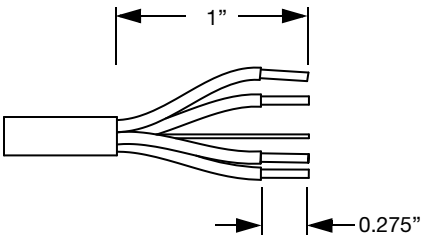
When connecting loudspeakers equipped with ECO-M connectors to the MPS-488HPp power supply, you need a Phoenix 5-pin female to a ECO-M 7-pin female cable. The following procedure documents how to assemble this cable.



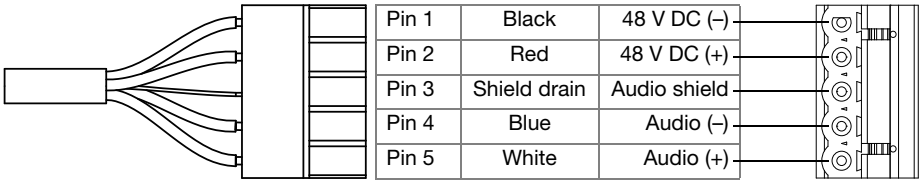
Assembled Phoenix-to-ECO-M Cable

To assemble a Phoenix-to-ECO-M cable:

1. If the cable has not yet been stripped, strip one end of the cable. Strip the outer shielding by 1 inch and then strip the black, red, blue, and white wires by 0.275 inch.



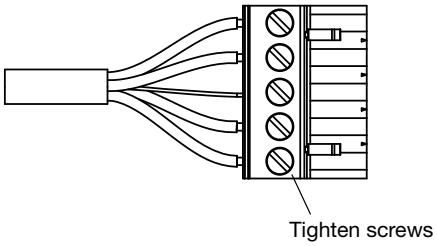
2. Insert the five exposed conductors into the five cable holes in a Phoenix 5-pin female cable mount connector. Use the following wiring scheme.



Pin 1	Black	48 V DC (–)
Pin 2	Red	48 V DC (+)
Pin 3	Shield drain	Audio shield
Pin 4	Blue	Audio (–)
Pin 5	White	Audio (+)

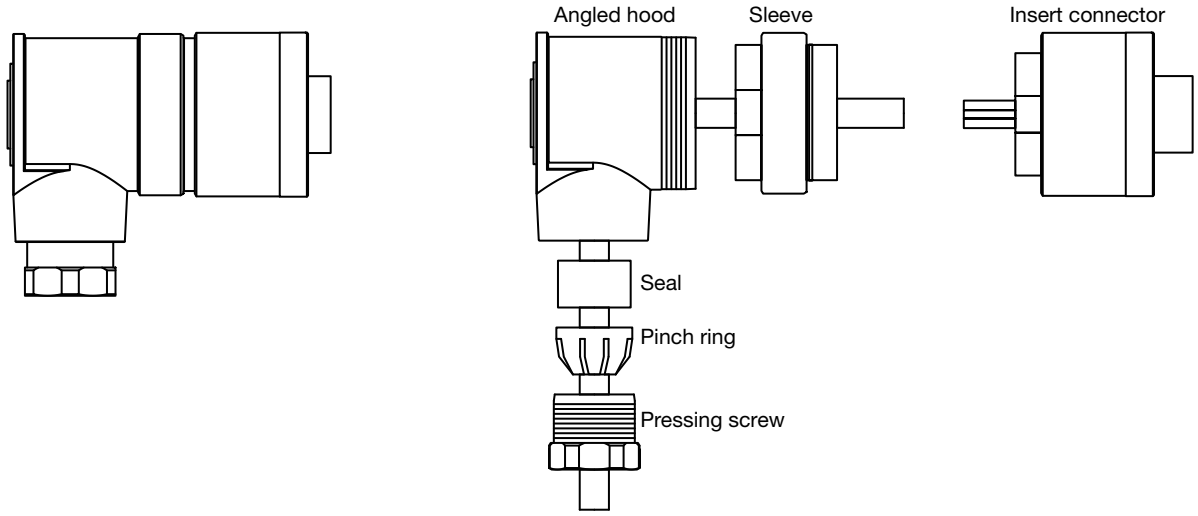
Pin Destinations for Phoenix 5-Pin Female Cable Mount Connector

3. Secure the conductors by tightening the five screws in the Phoenix cable mount connector. Screws should be torqued to 5–6 Nm(4.4–5.3 In-Lbs).



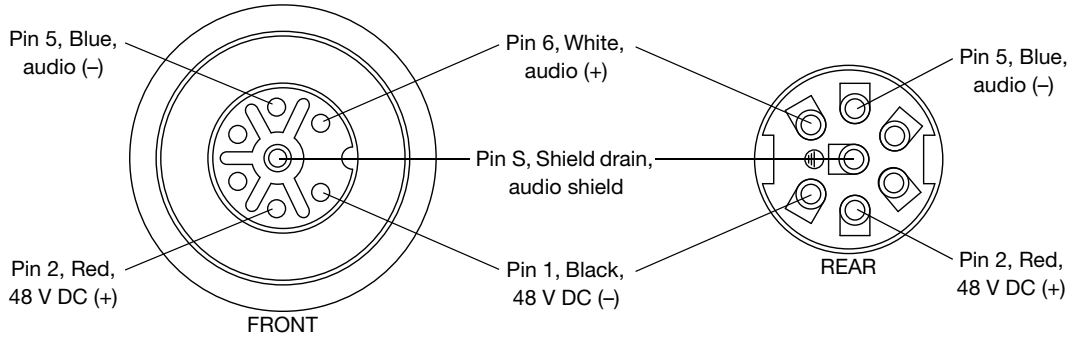
⚠ **CAUTION:** Screws should not be inserted into the Phoenix connector while the connector rests in a mating plug. Doing so will damage the contacts. During assembly, the Phoenix connector should only be held in place externally.

4. If the other (ECO-M) end of the cable has not been stripped, strip the outer shielding 1 inch and then strip the black, red, blue, and white wires 0.275 inch.
5. Disassemble the ECO-M 7-pin female connector and feed the stripped cable through the pressing screw, pinch ring, seal, angled hood, and sleeve.



ECO-M 7-Pin Female Cable Mount Connector, Assembled (Left) and Disassembled (Right)

6. Solder the five exposed conductors to the (1, 2, S, 5, and 6) pins on the ECO-M insert connector using the following wiring scheme.



Pin Destinations for ECO-M 7-Pin Female Cable Mount Connector

7. Reassemble the ECO-M 7-pin female connector:

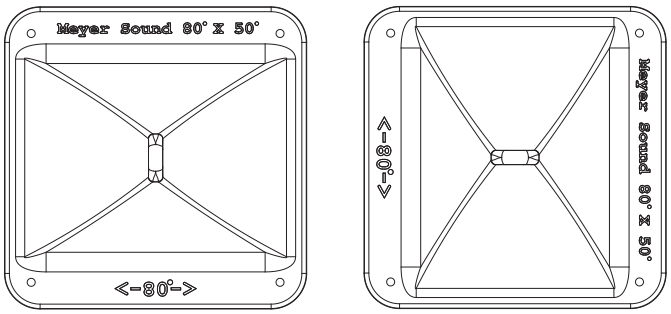
- Return the seal and pinch ring to the angled hood and secure it with the pressing screw.
- Return the sleeve to the angled hood and secure it with the insert connector.

8. Verify the wiring polarity is correct for both cable ends.

APPENDIX C: VARIO HORN FOR UPJ-1XP AND UPJUNIOR-XP

ROTATING THE VARIO HORN

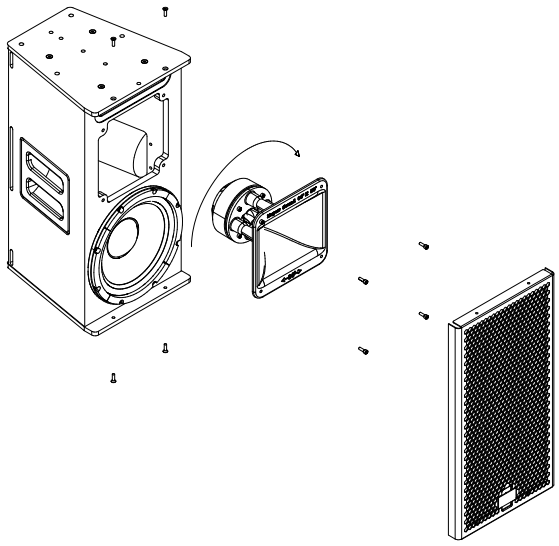
The UPJ-1XP and UPJunior-XP have VariO horns that can be easily rotated to deliver either wide or narrow coverage, whether the loudspeakers are oriented vertically or horizontally. The VariO horn is factory installed with a wide coverage of 80-degree horizontal by 50-degree vertical (when the loudspeaker is oriented vertically). The horn can be rotated to provide a narrow, targeted coverage of 50-degree horizontal by 80-degree vertical (when the loudspeaker is oriented vertically).



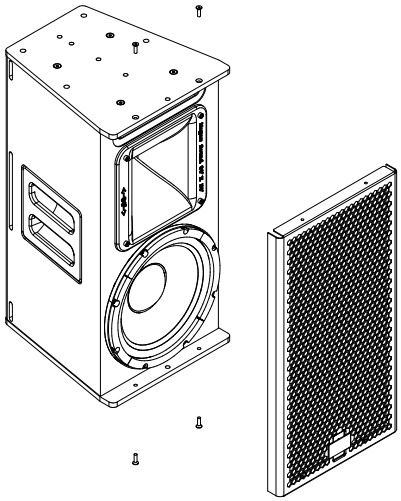
VariO Horn at 80-Degree Horizontal by 50-Degree Vertical (Left) and 50-Degree Horizontal by 80-Degree Vertical (Right)

To rotate the VariO horn from wide coverage to narrow coverage:

1. Remove the four 10-32 x 5/8” screws from the grille cover (two from the top and two from the bottom).
2. Carefully remove the grille cover.
3. Remove the four 10-32 x 1” flange screws from the horn.
4. Carefully remove the horn from the cabinet, making sure not to place any stress on its wiring.
5. Rotate the horn 90 degrees clockwise, so its orientation is 80-degree horizontal by 50-degree vertical, with the horn’s wide flange situated near the sides of the cabinet instead of the top and bottom.



6. Place the horn back in the cabinet (it should fit comfortably snug) and secure it with the four 10-32 x 1” flange screws.



7. Reattach the grille cover and secure it with the four 10-32 x 5/8” screws.

TIP: To rotate the Meyer Sound logo on the grille frame, pull the logo away from the grille frame, rotate it to the desired position, and release.

APPENDIX D: OPTIONAL RAIN HOODS AND WEATHER PROTECTION

Optional rain hoods, both vertical and horizontal, are available for Ultra XP loudspeakers that protect user panels from water intrusion.

NOTE: When using rain hoods with arrayed UPJ-1XPs or UPJunior-XPs, the maximum splay angles between loudspeakers is 40 degrees.

VERTICAL RAIN HOOD

The Ultra XP vertical rain hood should be used when loudspeakers are oriented vertically.

Vertical Rain Hood Kit Contents

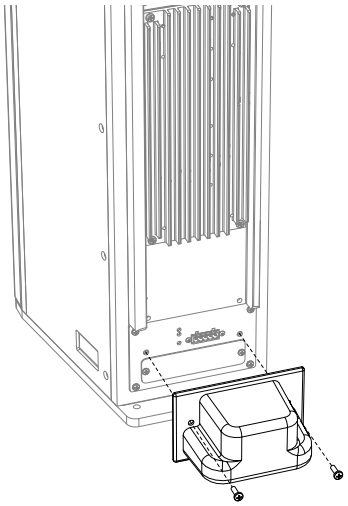
PN 40.196.062.02

Item	Part Number	Quantity
Vertical rain hood	66.196.062.02	1
Pan head screws	101.008	2

Installing the Vertical Rain Hood

To install the vertical rain hood:

1. Orient the Ultra XP loudspeaker vertically and attach any required cables.
2. Align the vertical rain hood with the user panel and its two center holes.
3. Secure the vertical rain hood to the user panel with the included pan head screws.



HORIZONTAL RAIN HOOD

The Ultra XP horizontal rain hood should be used when loudspeakers are oriented horizontally.

Horizontal Rain Hood Kit Contents

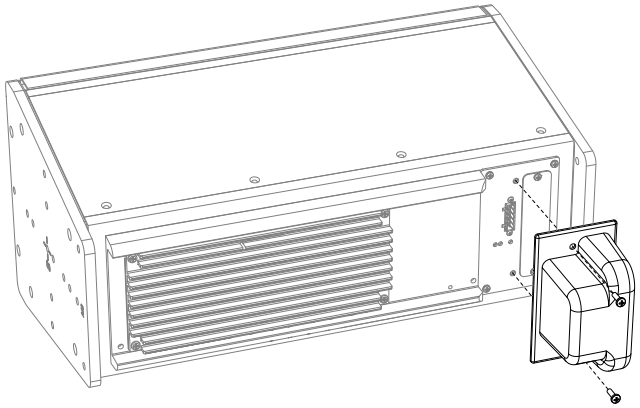
PN 40.196.062.01

Item	Part Number	Quantity
Horizontal rain hood	66.196.062.01	1
Pan head screws	101.008	2

Installing the Horizontal Rain Hood

To install the horizontal rain hood:

1. Orient the Ultra XP loudspeaker horizontally and attach any required cables.
2. Align the horizontal rain hood with the user panel and its two center holes.
3. Secure the horizontal rain hood to the user panel with the included pan head screws.



WEATHER-PROTECTED UPM-1XP AND UPM-2XP LOUDSPEAKERS

Weather-protected versions of the UPM-1XP and UPM-2XP are available for fixed, outdoor installations. The weather-protected cabinets differ from normal models in that the orientation of the loudspeaker is flipped and the rear panel connectors are located at the top instead of the bottom.

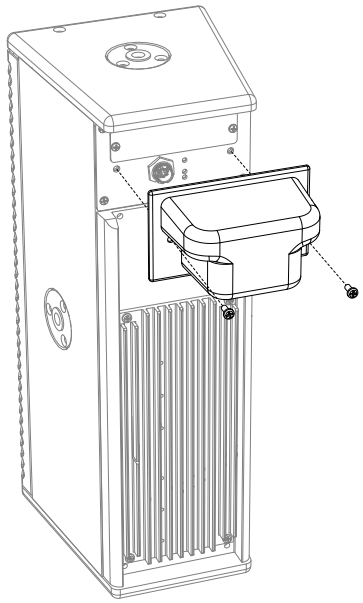
⚠ **CAUTION:** The weather-protected UPM-1XP and UPM-2XP loudspeakers can be mounted vertically or horizontally but must be mounted with a 0-degree tilt, or preferably with downtilt, to ensure the loudspeaker's electronics are shielded from the elements.

Reversed Rain Hood Kit

A special reversed rain hood kit is required for weather-protected UPM-1XP and UPM-2XP loudspeakers. The reversed rain hood accommodates and protects the rear panel connectors at the top of the cabinets.

PN 40.196.062.03

Item	Part Number	Quantity
Horizontal rain hood	66.196.062.03	1
Pan head screws	101.008	2



Weather-Protected UPM-1XP with Reversed Rain Hood

APPENDIX E: ULTRA XP LOUDSPEAKER SPECIFICATIONS

Ultra XP Loudspeaker Specifications

ACOUSTICAL	UPJ-1XP	UPJunior-XP	UPM-1XP	UPM-2XP	UMS-1XP
Operating Frequency Range	55 Hz – 20 kHz	70 Hz – 20 kHz	75 Hz – 20 kHz	80 Hz – 20 kHz	25 Hz – 160 Hz
	Note: Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.				
Frequency Response	66 Hz – 18 kHz ±4 dB	76 Hz – 18 kHz ±4 dB	80 Hz – 16 kHz ±4 dB	85 Hz – 19 kHz ±4 dB	29 Hz – 135 Hz ±4 dB
	Note: Free-field, measured with 1/3rd octave resolution at 4 meters.				
Phase Response	750 Hz – 18 kHz ±45°	250 Hz – 18 kHz ±45°	300 Hz – 18 kHz ±60°	300 Hz – 18 kHz ±60°	41 Hz – 155kHz ±30°
Maximum Peak SPL	128 dB	126 dB	123 dB	123 dB	127 dB
	Note: Free-field, measured with music, referred to 1 meter.	**Note:** Free-field, measured with music, referred to 1 meter.	**Note:** Free-field, measured with music, referred to 1 meter.	**Note:** Free-field, measured with music, referred to 1 meter.	**Note:** Half-space loading, measured with music, referred to 1 meter.
Dynamic Range	>110 dB	>110 dB	>110 dB	>110 dB	>110 dB
Coverage	80° x 50° or 50° x 80° (rotatable VariO horn)	80° x 50° or 50° x 80° (rotatable VariO horn)	100° x 100°	45° x 45°	360° for single unit; for multiple units, varies with configuration
Acoustical Crossover	2000 Hz	3500 Hz	1300 Hz	2300 Hz	–
	Note: At this frequency, the transducers produce equal sound pressure levels.				
TRANSDUCERS	**UPJ-1XP**	**UPJunior-XP**	**UPM-1XP**	**UPM-2XP**	**UMS-1XP**
Low Frequency	One 10” cone driver	One 8” cone driver	Two 5” cone drivers	Two 5” cone drivers	Two 10” cone drivers
	Note: UPM-1XP/UPM-2XP low-frequency drivers active below 320 Hz. From 320 Hz to the 1300 Hz crossover point, only one low-frequency driver, the one closest to the high-frequency driver, is active, to maintain optimal polar and off-axis frequency response characteristics.				
High Frequency	One 3” diaphragm compression driver	One 2” diaphragm compression driver	One 1” metal dome tweeter	One 1” metal dome tweeter	–
CONNECTOR OPTIONS		Phoenix	SwitchCraft	ECO-M	
	Wiring:	5-pin male	EN3 5-pin male	7-pin male	
	DC Power (+)	Pin 1	Pin 1	Pin 5	
	DC Power (–)	Pin 2	Pin 2	Pin 6	
	Audio Shield	Pin 3	Pin 3	Pin S	
	Audio (+)	Pin 4	Pin 4	Pin 1	
	Audio (–)	Pin 5	Pin 5	Pin 2	
	Note: Audio shield, chassis/earth through a 1 kΩ, 1000 pF, 15 V clamped network to provide virtual ground lift at audio frequencies				
AUDIO INPUT	**UPJ-1XP**	**UPJunior-XP**	**UPM-1XP**	**UPM-2XP**	**UMS-1XP**
Type	Differential, electronically balanced				
Maximum Common Mode Range	±15 V DC, clamped to earth for voltage transient protection				
Input Impedance	10 kΩ differential between positive (+) and negative (–) audio pins				
DC Blocking	Differential DC blocking up to the maximum common mode voltage				
CMRR	>50 dB, typically 80 dB (50 Hz – 500 Hz)				
RF Filter	Common mode: 425 kHz; Differential mode: 142 kHz				
TIM Filter	<80 kHz, integral to signal processing				

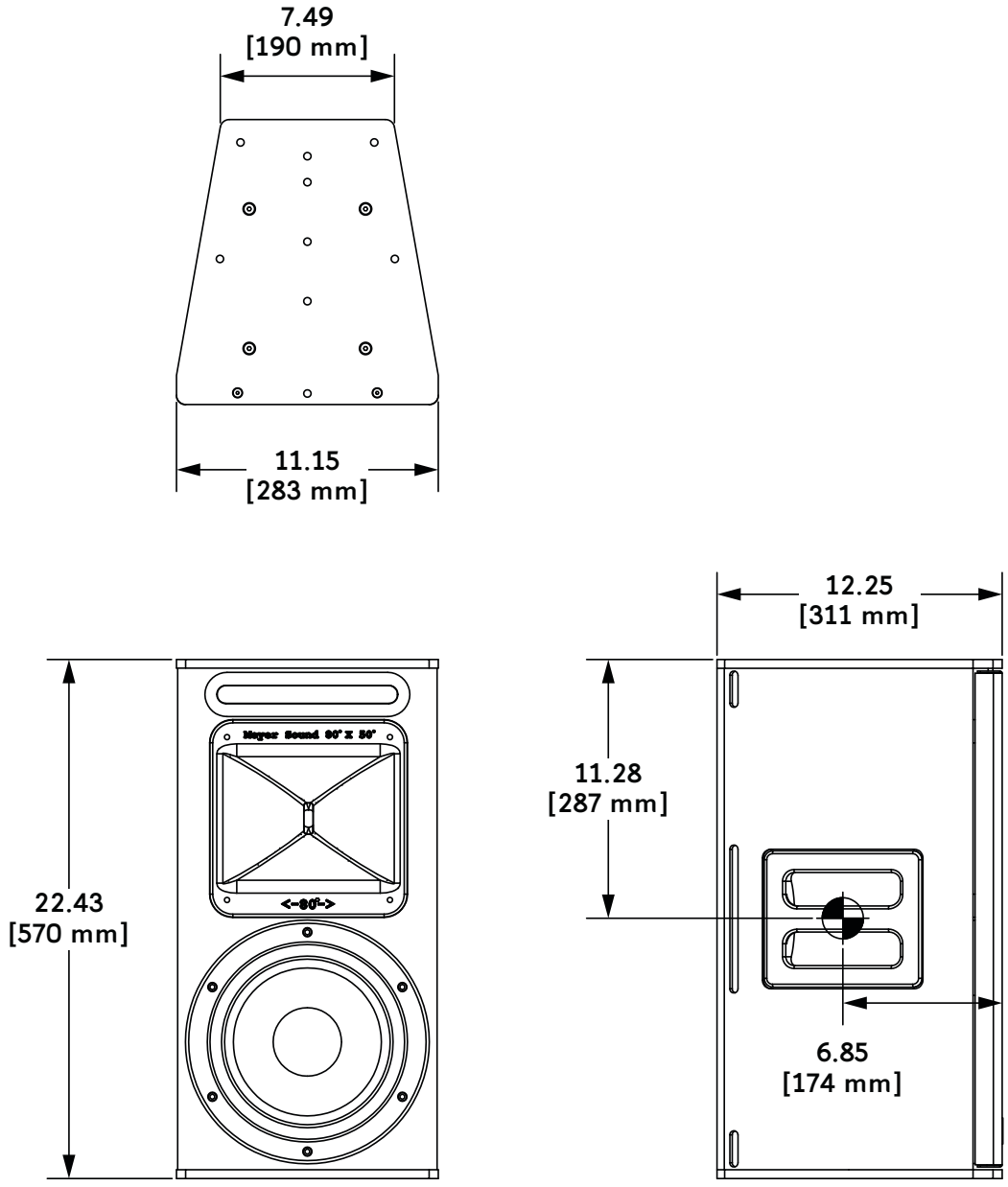
Ultra XP Loudspeaker Specifications

	UPJ-1XP	UPJunior-XP	UPM-1XP	UPM-2XP	UMS-1XP
Nominal Input Sensitivity	0.0 dBV (1.0 V rms) continuous is typically the onset of limiting for noise and music	0.0 dBV (1.0 V rms) continuous is typically the onset of limiting for noise and music	–8.0 dBV (0.4 V rms) continuous is typically the onset of limiting for noise and music	–8.0 dBV (0.4 V rms) continuous is typically the onset of limiting for noise and music	–4.0 dBV (0.6 V rms) continuous is typically the onset of limiting for noise and music
Input Level	Audio source must be capable of producing +20 dBV (10 V rms, 14 V peak) into 600 Ω to produce the maximum peak SPL over the operating bandwidth of the loudspeaker				
AMPLIFIER	**UPJ-1XP**	**UPJunior-XP**	**UPM-1XP**	**UPM-2XP**	**UMS-1XP**
Amplifier Type	2-channel (class D)	2-channel (class D)	3-channel (class D)	3-channel (class D)	2-channel (class D)
Output Power	300 W total	300 W total	350 W total	350 W total	450 W total
	Note: Wattage rating based on the maximum unclipped burst sine-wave rms voltage the amplifier will produce into the nominal load impedance.				
THD, IM TIM	<.02%	<.02%	<.02%	<.02%	<.02%
Load Capacity	4 Ω low channel, 16 Ω high channel	4 Ω low channel, 12 Ω high channel	8 Ω low channel, 8 Ω high channel	8 Ω low channel, 8 Ω high channel	4 Ω both channels
Cooling	Convection	Convection	Convection	Convection	Convection
DC POWER	**UPJ-1XP**	**UPJunior-XP**	**UPM-1XP**	**UPM-2XP**	**UMS-1XP**
Voltage Requirement	48 V DC	48 V DC	48 V DC	48 V DC	48 V DC
	Note: Meyer Sound power supply required. For information and specifications on the MPS-488HP IntelligentDC external power supply, refer to its datasheet.				
PHYSICAL	**UPJ-1XP**	**UPJunior-XP**	**UPM-1XP**	**UPM-2XP**	**UMS-1XP**
Enclosure	Premium birch plywood	Premium birch plywood	Premium birch plywood	Premium birch plywood	Premium birch plywood
Finish	Black textured	Black textured	Black textured	Black textured	Black textured
Protective Grille	Powder-coated, hex-stamped steel with black mesh screen	Powder-coated, hex-stamped steel with black mesh screen	Powder-coated, hex-stamped steel with black mesh screen	Powder-coated, hex-stamped steel with black mesh screen	Powder-coated, hex-stamped steel with black mesh screen
Mounting	Aluminum end plates with M8 threaded attachment points for mounting and flying with QuickFly and standard rigging options	Aluminum end plates with M8 threaded attachment points for mounting and flying with QuickFly and standard rigging options	Three 3/8”-16 or metric M10 nut plates	Three 3/8”-16 or metric M10 nut plates	1 3/8” (35 mm) pole-mount receptacle on cabinet top; cabinet optionally available with side attachment points for USM-SM U-bracket
Dimensions	11.15” w (283 mm) 22.43” h (570 mm) 12.25” d (311 mm)	9.00” w (229 mm) 19.04” h (484 mm) 10.20” d (259 mm)	6.85” w (174 mm) 18.00” h (457 mm) 7.70” d (196 mm)	6.85” w (174 mm) 18.00” h (457 mm) 7.70” d (196 mm)	22.75” w (578 mm) 16.30” h (414 mm) 17.51” d (445 mm)
Weight	43 lbs (19.5 kg)	26 lbs (11.8 kg)	17 lbs (7.7 kg)	17 lbs (7.7 kg)	58 lbs (26.3 kg)
ENVIRONMENTAL	**UPJ-1XP**	**UPJunior-XP**	**UPM-1XP**	**UPM-2XP**	**UMS-1XP**
Operating Temperature	0° C to +45° C				
Non Operating Temperature	–40° C to +75° C				
Humidity	To 95% at 45° C (non-condensing)				

Ultra XP Loudspeaker Specifications

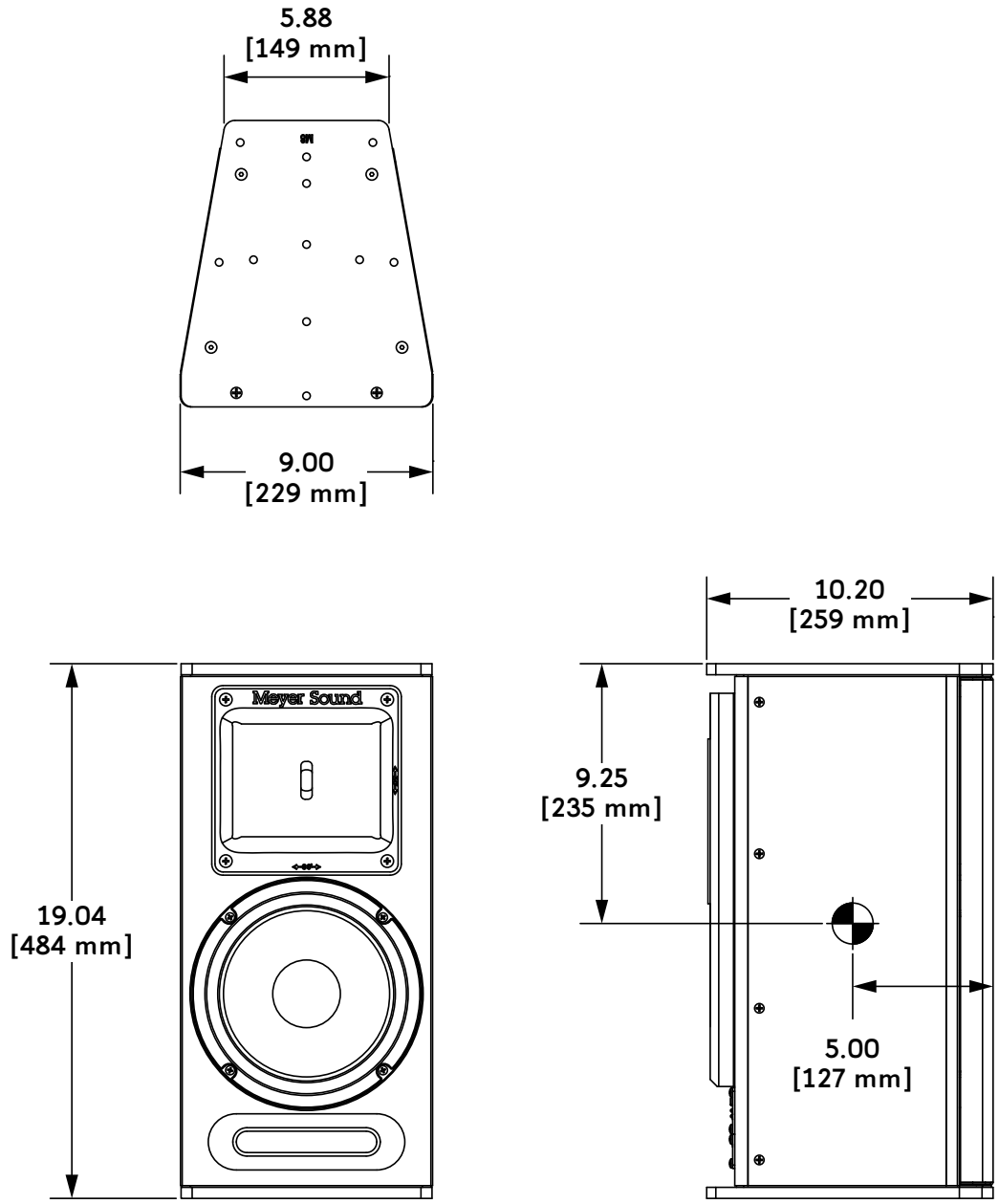
Operating Altitude	To 5,000 m (16,404 ft)
Non Operating Altitude	To 12,000 m (39,000 ft)
Shock	30 g 11 msec half-sine on each of 6 sides
Vibration	10 Hz – 55 Hz (0.010 m peak-to-peak excursion)

UPJ-1XP DIMENSIONS



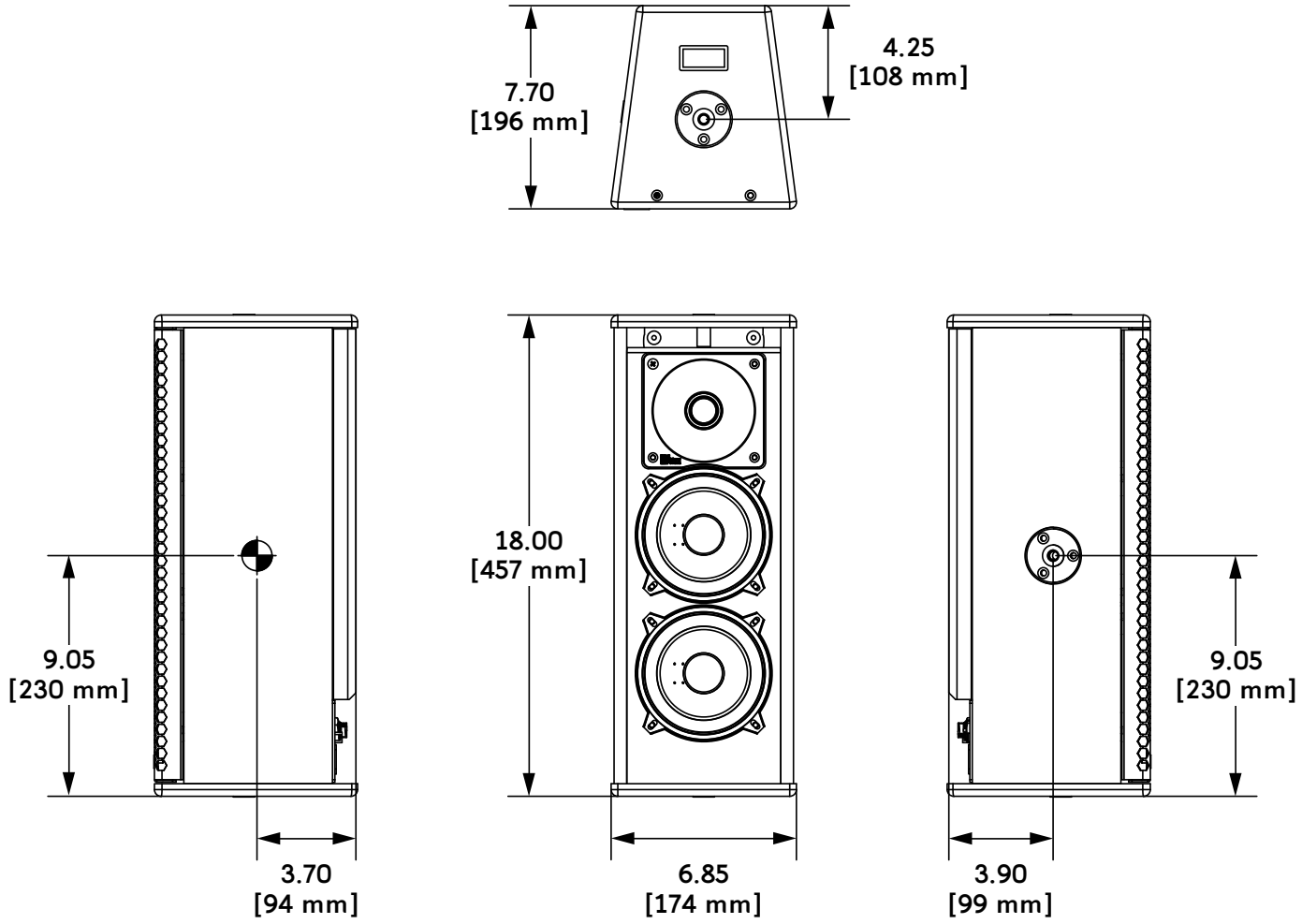
UPJ-1XP Dimensions

UPJUNIOR-XP DIMENSIONS



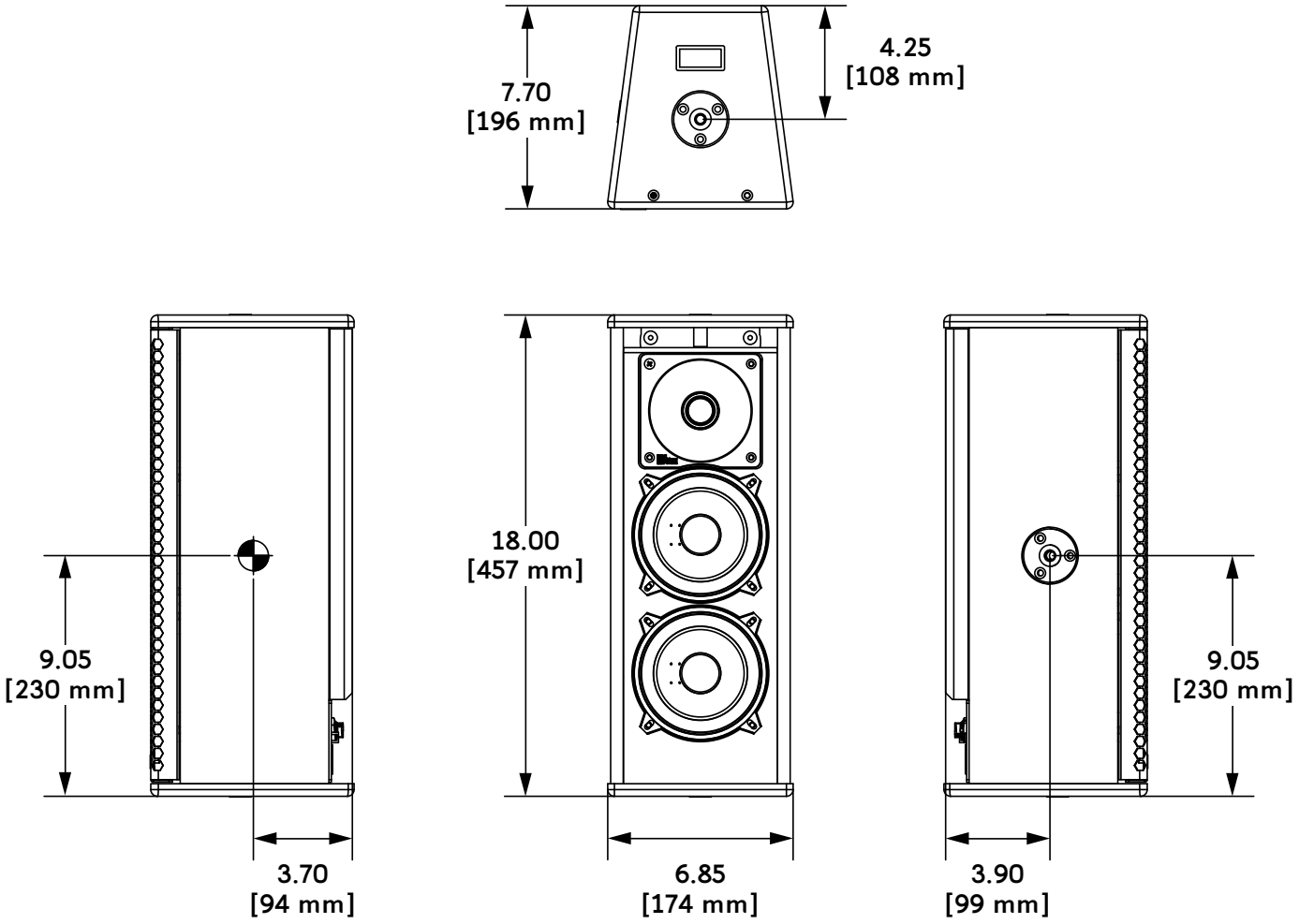
UPJunior-XP Dimensions

UPM-1XP DIMENSIONS



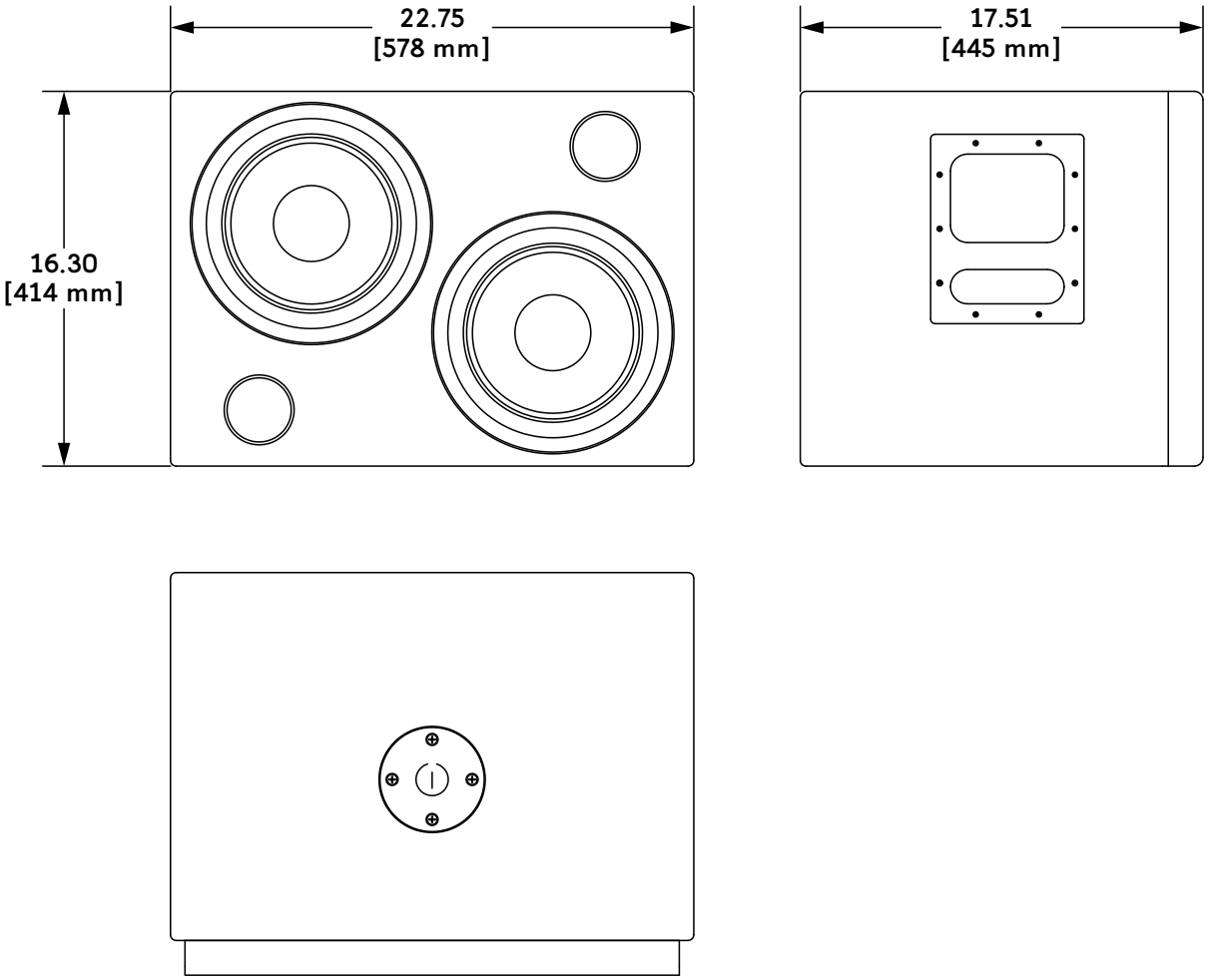
UPM-1XP Dimensions

UPM-2XP DIMENSIONS



UPM-2XP Dimensions

UMS-1XP DIMENSIONS



UMS-1XP Dimensions

DECLARATION OF CONFORMITY

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INDUSTRY CANADA COMPLIANCE STATEMENT

This Class A digital apparatus complies with Canadian ICES-003.

AVIS DE CONFORMITÉ À LA RÉGLEMENTATION D'INDUSTRIE CANADA

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN 45014

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Manufacturer's Name: **Meyer Sound Laboratories Inc.**

Manufacturer's Address: **2832 San Pablo Avenue**
Berkeley, California 94702-2204
USA

Declares that the product

Product Name: **M1D-SubXP, UMS-1XP, UP-4XP, UPJ-1XP, UPJunior-XP, UPM-1XP, UPM-2XP**

Product Options: **All**

Conforms to the following Product Specifications:

Safety: EN 60065:2002/A1:2006 + A11:2008 + A2:2010 + A12:2011,

EMC: EN 55103-1: 2009 emission
EN 55103-2: 2009 immunity

This device complies with EN 55103-1 & -2 as noted below. Operation is subject to the following 2 conditions: This device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

Environmental: EN 50581:2012

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive (LVD) 2006/95/EC, EMC Directive 2004/108/EC and the RoHS Directive 2011/65/EU.

Signature:

Date of issue: June 17, 2013

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Ultra XP Operating Instructions
PN 05.915.005.01 A